AEB-945GSE0

Atom N270, Mini-ITX

User's Manual

Rev.04, Sep. 2010

Statement

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Packing List

- ☐ 1 x System board
- ☐ 1 x Driver CD (Include user's manual)
- ☐ 1 x I/O Shield
- ☐ 1 x Serial ATA data cable
- ☐ 1 x RS-232 cable(2 Port)
- ☐ 1 x USB cable(2 Port)
- ☐ 1 x Printer cable

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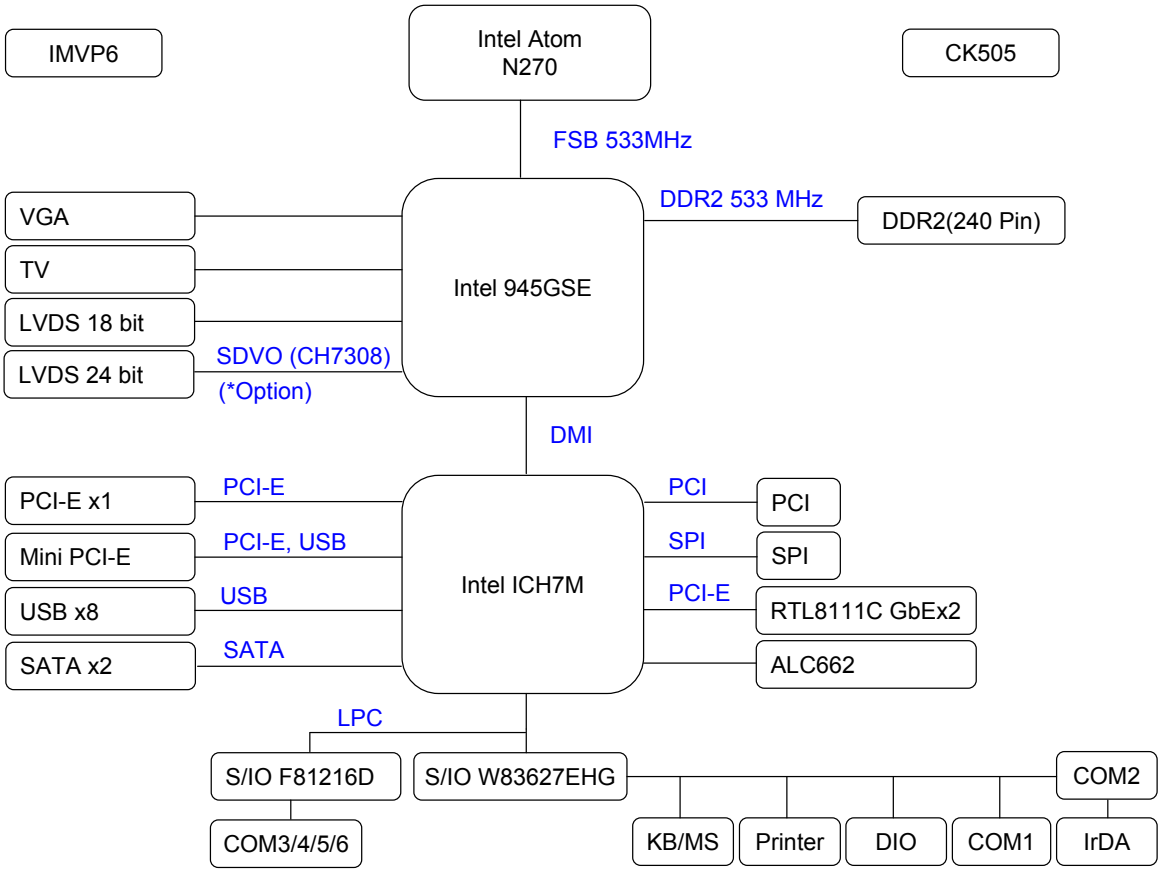
Chapter 1 Product Information

This chapter introduces the product features, jumper and connector information.

1.1 Block Diagram

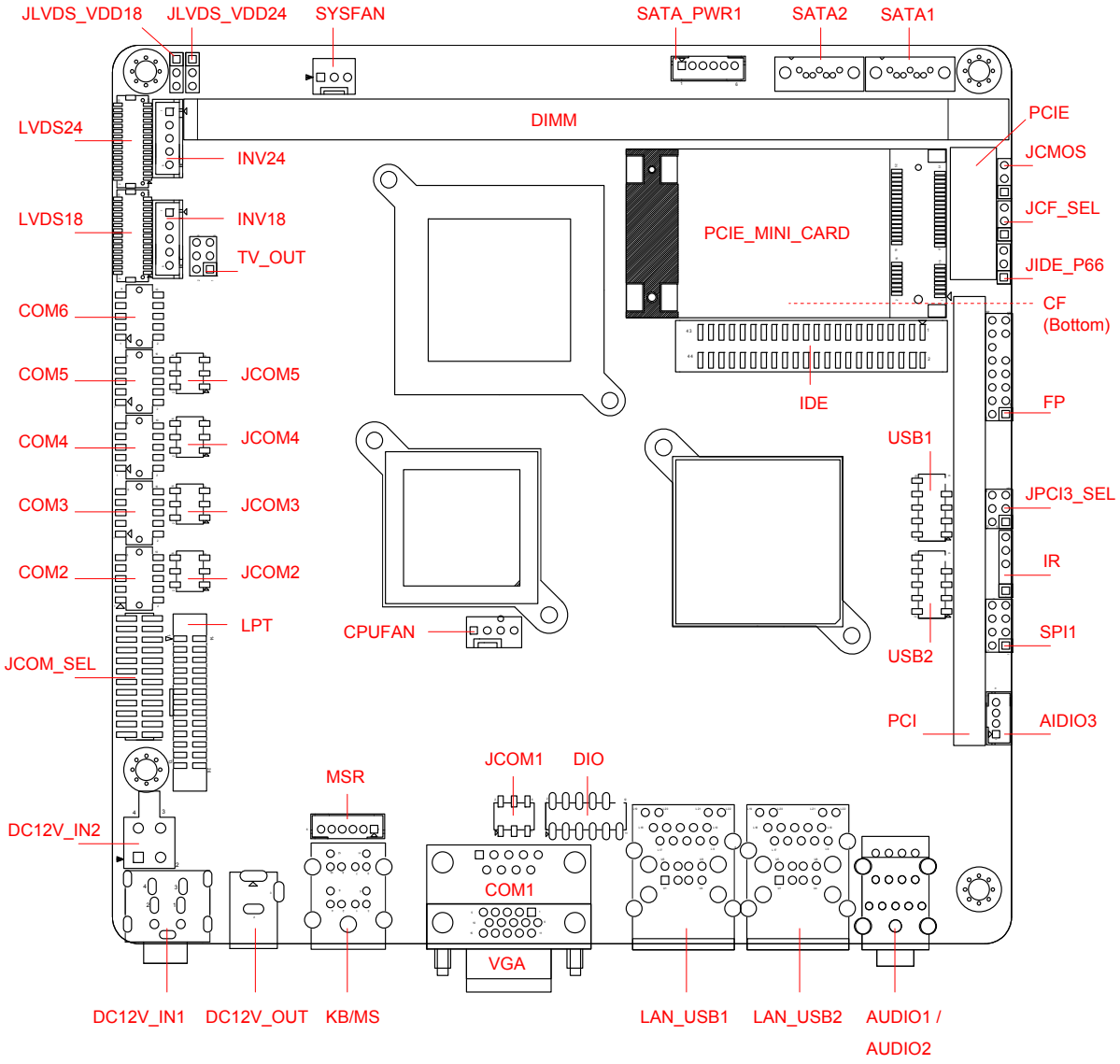


1.2 Features

System Processor / Chipset	Processor	Intel Atom N270 single-core processor
	FSB	533 MHz
	Chipset	Intel 945GSE + ICH7M
	BIOS	AWARD 16Mb SPI
Memory	Technology	DDR2 533 MHz SDRAM
	Max. Capacity	Up to 2GB
	Socket	1 x 240-pin DDR2 DIMM
Display	Chipset	Intel 945GSE integrated GMA950
	VRAM	Shared with 224MB system memory
	Resolution	Analog Display: Up to 2048 x 1536 (QXGA)
	LVDS	Chrontel CH7308 18/24 bit, Dual Channel
	LVDS Resolution	Digital LVDS: Up to 1600 x 1200 (UXGA)
	TV-Out	Both S-Video/Composite Video (Cable)
	Dual Display	CRT+LVDS, LVDS+TV, TV+CRT
Ethernet	Interface	Dual 10/100/1000 Mbps
	Controller	Realtek RTL8111C
Audio	Interface	High Definition Audio
	Controller	Realtek ALC662 HD CODEC
SATA	Max. Data Transfer Rates	300 MB/s
	Port	2
IDE	Mode	IDE (44 Pin), Ultra ATA100/66/33
	Channel	1
	Compact Flash	1, Compact Flash Type I/II
Expansion Slot	PCI-E x1	1
	PCI	1
	Mini PCI-E	1

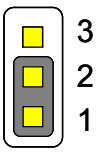
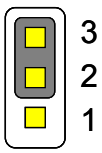
Internal Connector	LVDS	2, (1 LVDS 18bit) (1 LVDS 24bit for optional)
	USB 2.0	4
	COM	5[4(RS-232, supply 5V & 12V); 1 (RS-422/485)]
	Parallel	1
	Audio Amplifier	1 [2 x 6W(4Ω) stereo]
	Compact Flash	1 (Bottom Side)
	Digital IO	8Bit GPIO (4 IN+4 OUT)
Rear I/O	DC 12V In	1x4 Pin 12V Power In
	DC12V Out	DC Power Jack
	PS/2	2 (1 x K/B and 1 x Mouse)
	VGA	1
	COM	1
	LAN	2 RJ45
	USB 2.0	4
	Audio	3 (Mic. In, Line-in, Line-out)
Power	Type	DC +12V Input
Watchdog Timer	Interval	Programmable 1~255 sec./min.
	Output	System reset
Environment	Operating Temp.	-5°C~ 60°C (23°F ~ 140°F)
	Storage Temp.	-20°C~ 80°C (-4°F ~ 176°F)
	Relative Humidity	0%~ 95% (non-condensing)
Form Factor	Dimension (L x W)	Mini-ITX (170mm x 170mm) (6.69:" x 6.69")

1.3 PCB Layout

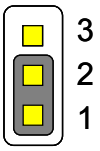
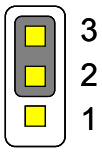


1.4 Jumper Setting

JCMOS：CMOS Clear

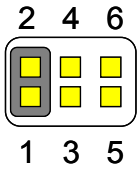
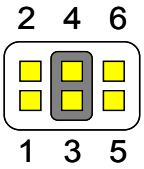
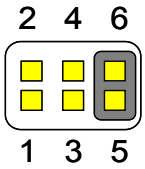
Pin No.	1-2	2-3
Function	Normal Operation (Default)	Clear CMOS Contents
Jumper Setting		

JCF_SEL：Compact Flash (Master / Slave) Select

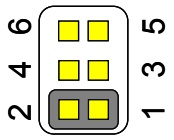
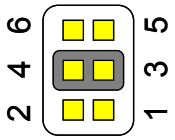
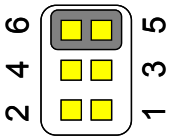
Pin No.	1-2	2-3
Function	Master Mode	Slave Mode (Default)
Jumper Setting		

Note: Compact Flash signal share with IDE channel

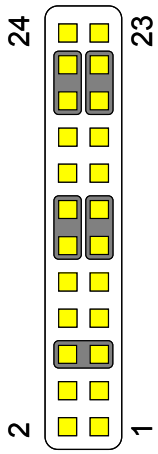
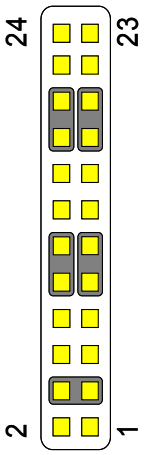
JCOM1 : COM1 (5V/12V/RI) Select

Pin No.	1-2	3-4	5-6
Function	+5V	Modem Ring In (Default)	+12V
Jumper Setting			

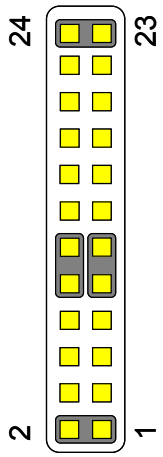
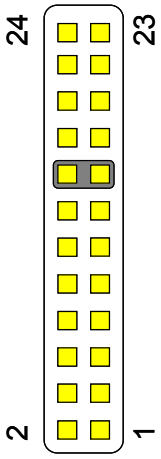
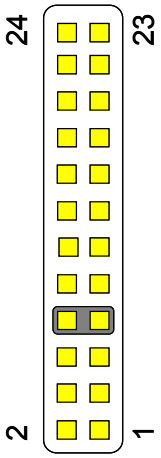
JCOM2/3/4/5 : COM2/3/4/5 (5V/12V/RI) Select

Pin No.	1-2	3-4	5-6
Function	+5V	Modem Ring In (Default)	+12V
Jumper Setting			

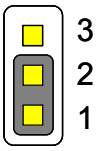
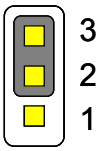
JCOM_SEL : RS-232/RS-422/RS-485 Select (1/2)

Pin No.	5-6, 11-13, 12-14, 19-21, 20-22	3-4, 9-11, 10-12, 17-19, 18-20
Function	RS-232 (Default)	RS-422
Jumper Setting		

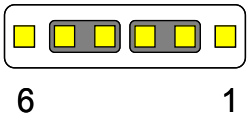
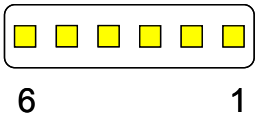
JCOM_SEL : RS-232/RS-422/RS-485 Select (2/2)

Pin No.	1-2, 9-11, 10-12, 23-24	15-16	7-8
Function	RS-485	RS-422 RX 100Ω Termination	RS-422 TX 100Ω / RS-485 Termination
Jumper Setting			

JIDE_P66 : (IDE transfer rate select)

Pin No.	1-2	2-3
Function	Auto Detect (Default)	Ultra DMA Mode2 (Minimum)
Jumper Setting		

MSR : MSR (Magnetic Stripe Reader) Connection

Pin No.	2-3, 4-5	NC
Function	Normal Operation (Default)	Connect to MSR cable
Jumper Setting		

1.5 Connector Function List

Connector	Function	Note
AUDIO1	Audio 3 Ports Connector	
AUDIO3	Internal Speaker Out(6W x 2)	
COM1/3/4/5/6	RS-232 Connector	
COM2	RS-232/RS-422/RS-485 Connector	
CPUFAN	CPU FAN Connector	
DC12V_IN1	DC12V Input	
DC12V_IN2	DC12V Input	
DC12V_Out	DC12V Power Output Jack	
DIMM	DDR2 Memory Slot	
DIO	Digital Input/output	
FP	Front Panel Connector	
IDE	IDE connector	
IR	IrDA connector	
INV_18	18bit LCD Inverter connector	
INV_24	24bit LCD Inverter connector	
KB/MS	KB/MS PS2 Connector	
LAN_USB1	LANX1 & USBX2 Connector	
LAN_USB2	LANX1 & USBX2 Connector	
LPT	Parallel Port	
LVDS_18	18bit LCD connector	
LVDS_24	24bit LCD connector	
PCI	PCI Slot	
PCIE	PCIE x1 Slot	
PCIE_MINI_CARD	Mini PCIE Connector	
SATA1 / SATA2	SATA Connector	
SATA_PWR1	SATA Power	
SYSFAN	System FAN Connector	
TV_OUT	TV OUT Connector	
USB1 / USB2	USBX2 Connector	
VGA_COM1	VGA & COM1 Connector	

1.6 Internal Connector Pin Define

AUDIO3：Amplifier Out with Box-header (2.0 mm)

Pin No.	Signal
1	Amplifier Out-Right
2	Ground
3	Ground
4	Amplifier Out-Left

COM2, COM3, COM4, COM5：Serial Port with Box-header (2.0 mm)

Pin No.	Signal	Pin No.	Signal
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI/+5V/+12V
9	Ground	10	RI/+5V/+12V

CPUFAN：4Pin CPU FAN Connector

Pin No.	Signal
1	Ground
2	Fan Power (+12V)
3	Speed Sense
4	Control

DC12V_IN1 : DC12V Power Input Connector

Pin No.	Signal
1	GND
2	+12V
3	GND
4	+12V

DC12V_IN2 : DC12V Power Input Connector

Pin No.	Signal
1	GND
2	GND
3	+12V
4	+12V

DC12V_Out : DC12V Power Output Jack

Pin No.	Signal
1	+12V
2	GND

DIO：Digital IO Connector with Pin-header (2.54mm)

Pin No.	Signal	Pin No.	Signal
1	D_Out0	2	D_IN0
3	D_Out1	4	D_IN1
5	D_Out2	6	D_IN2
7	D_Out3	8	D_IN3
9	+12V	10	+5V
11	GND	12	Key

FP：Front Panel Connector with Pin-header (2.54mm)

Pin No.	Signal	Pin No.	Signal
1	Power LED+	2	HDD LED+
3	N/C	4	HDD LED-
5	Power LED- (GND)	6	Suspend LED+
7	RESET+	8	Suspend LED-
9	RESET-(GND)	10	Speaker-
11	Key	12	N/C
13	Power Button+	14	N/C
15	Power Button-(GND)	16	Speaker +(+5V)

INV18 / INV24 : LCD Inverter Connector with Box-header (2.50 mm)

Pin No.	Signal
1	+12V
2	+12V
3	GND
4	Back Light Control
5	Back Light Enable#

IR：IrDA Connector with Pin-header (2.54 mm)

Pin No.	Signal
1	+5V
2	NC
3	IR-RX
4	Ground
5	IR-TX

LPT：Printer Port Connector with Box-header (2.0 mm)

Pin No.	Signal	Pin No.	Signal
1	STB#	14	AFD#
2	PD0	15	ERR#
3	PD1	16	INIT#
4	PD2	17	SLIN#
5	PD3	18	GND
6	PD4	19	GND
7	PD5	20	GND
8	PD6	21	GND
9	PD7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT	26	GND

LVDS18：LVDS 18 bit Connector

Pin No.	Signal	Pin No.	Signal
1	GND	2	GND
3	N/C	4	N/C
5	A_CLK+	6	A_CLK-
7	A_DATA2+	8	A_DATA2-
9	A_DATA1+	10	A_DATA1-
11	A_DATA0+	12	A_DATA0-
13	GND	14	GND
15	NC	16	NC
17	B_CLK+	18	B_CLK-
19	B_DATA2+	20	B_DATA2-
21	B_DATA1+	22	B_DATA1-
23	B_DATA0+	24	B_DATA0-
25	DDC_CLK	26	DDC_DATA
27	+3.3V	28	+3.3V
29	+3.3V	30	+3.3V

LVDS24：LVDS 24 bit Connector

Pin No.	Signal	Pin No.	Signal
1	GND	2	GND
3	A_DATA3+	4	A_DATA3-
5	A_CLK+	6	A_CLK-
7	A_DATA2+	8	A_DATA2-
9	A_DATA1+	10	A_DATA1-
11	A_DATA0+	12	A_DATA0-
13	GND	14	GND
15	B_DATA3+	16	B_DATA3-
17	B_CLK+	18	B_CLK-
19	B_DATA2+	20	B_DATA2-
21	B_DATA1+	22	B_DATA1-
23	B_DATA0+	24	B_DATA0-
25	DDC_CLK	26	DDC_DATA
27	+3.3V	28	+3.3V
29	+3.3V	30	+3.3V

SATA_PWR1：SATA Power Connector with Box-header (2.54mm)

Pin No.	Signal
1	+5V
2	+5V
3	GND
4	GND
5	+12V
6	+12V

SYSFAN：System FAN 3 Pin Connector

Pin No.	Signal
1	Sensor
2	+12V
3	GND

TV_OUT：TV OUT Connector with Pin-header (2.54mm)

Pin No.	Signal	Pin No.	Signal
1	Blue	2	GND
3	Green	4	GND
5	Red	6	GND

USB1/ USB2：USB Port Connector with Pin-header (2.54mm)

Pin No.	Signal	Pin No.	Signal
1	+5V	2	+5V
3	USB DATA-	4	USB DATA-
5	USB DATA+	6	USB DATA+
7	GND	8	GND
9	key	10	GND

Chapter 2 BIOS Setup

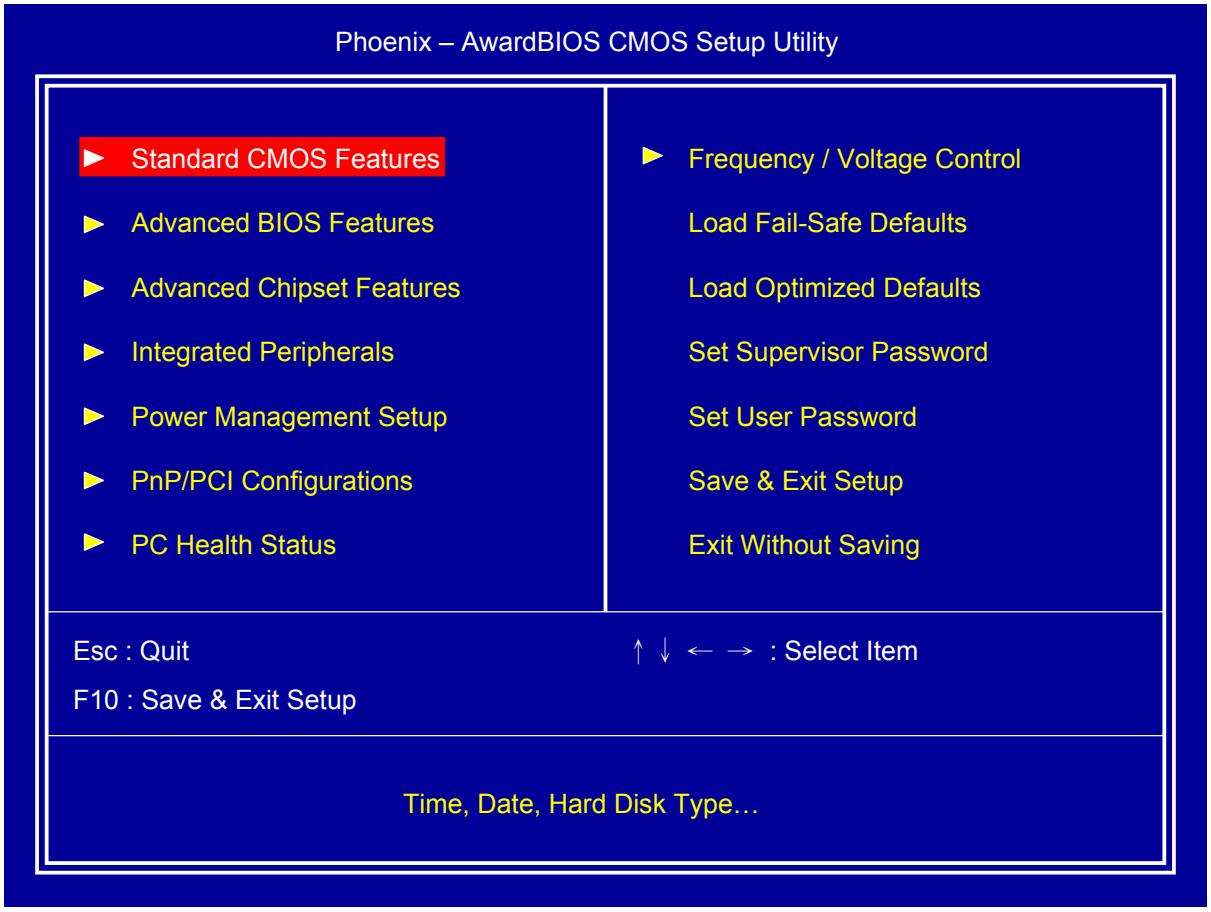
This chapter introduces BIOS setup information.

Power on or reboot the system board, when screen appears message as “Press DEL to enter SETUP“. Press <DEL> key to run BIOS SETUP Utility.

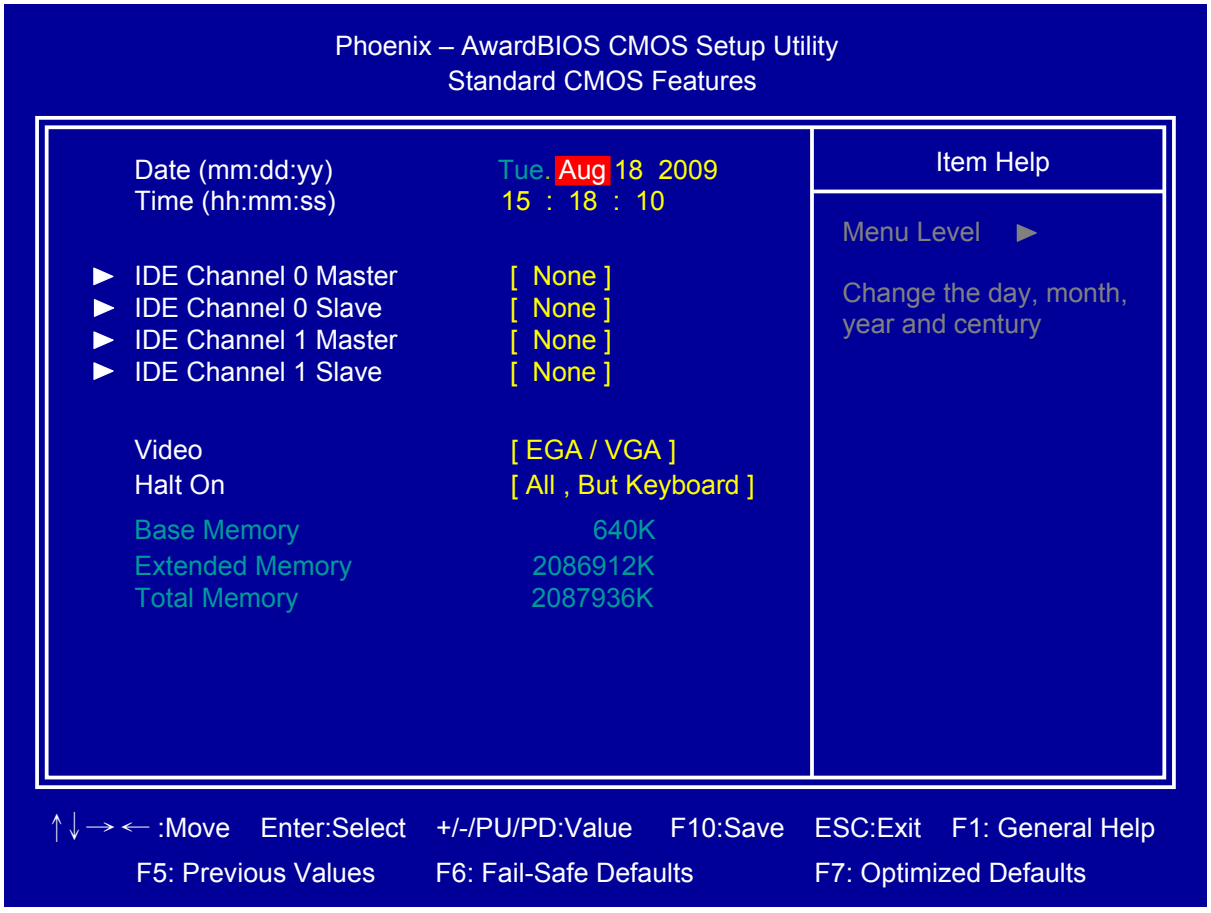
Note: The BIOS configuration for reference only, it may subject to change without prior notice.

2.1 Main Menu

Please use arrow keys to select item, then press <Enter> key to accept or enter the sub-menu.



2.2 Standard CMOS Features


Phoenix – AwardBIOS CMOS Setup Utility
Standard CMOS Features
Date (mm:dd:yy) Tue. Aug 18 2009
Time (hh:mm:ss) 15 : 18 : 10
IDE Channel 0 Master [None]
IDE Channel 0 Slave [None]
IDE Channel 1 Master [None]
IDE Channel 1 Slave [None]
Video [EGA / VGA]
Halt On [All , But Keyboard]
Base Memory 640K
Extended Memory 2086912K
Total Memory 2087936K
Item Help
Menu Level ►
Change the day, month, year and century
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ **Date**

Set system date.

☐ **Time**

Set system time.

☐ **IDE Channel 0 Master/Slave**

Press <Enter> for IDE device automatic detection.

☐ **IDE Channel 1 Master/Slave**

Press <Enter> for IDE device automatic detection.

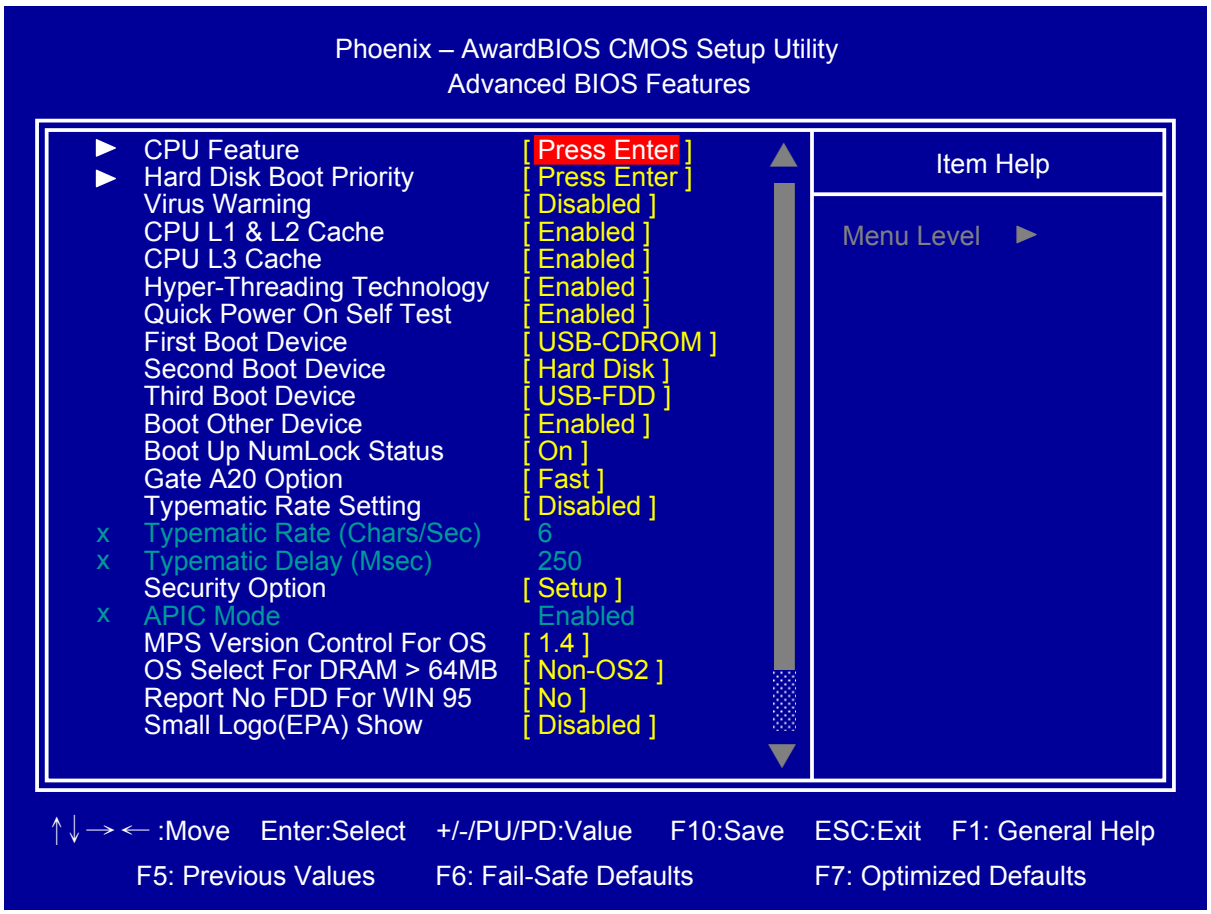
☐ **Video**

Select Video device type.

☐ **Halt on**

Select stop procedure or ignore when error detected during POST (Power On Self Test).

2.3 Advanced BIOS Features


Phoenix – AwardBIOS CMOS Setup Utility
Advanced BIOS Features
► CPU Feature [Press Enter]
► Hard Disk Boot Priority [Press Enter]
Virus Warning [Disabled]
CPU L1 & L2 Cache [Enabled]
CPU L3 Cache [Enabled]
Hyper-Threading Technology [Enabled]
Quick Power On Self Test [Enabled]
First Boot Device [USB-CDROM]
Second Boot Device [Hard Disk]
Third Boot Device [USB-FDD]
Boot Other Device [Enabled]
Boot Up NumLock Status [On]
Gate A20 Option [Fast]
Typematic Rate Setting [Disabled]
x Typematic Rate (Chars/Sec) 6
x Typematic Delay (Msec) 250
Security Option [Setup]
x APIC Mode Enabled
MPS Version Control For OS [1.4]
OS Select For DRAM > 64MB [Non-OS2]
Report No FDD For WIN 95 [No]
Small Logo(EPA) Show [Disabled]
Item Help
Menu Level ►
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ **CPU Feature**

Press <Enter> to select CPU parameter.

☐ **Hard Disk Boot Priority**

Press <Enter> to select Hard Disk boot device priority.

☐ **Virus Warning**

Select “Virus Warning” Enabled/Disabled.

☐ **CPU L1 & L2 Cache**

Select “CPU L1 & L2 Cache” Enabled/Disabled.

☐ **CPU L3 Cache**

Select “CPU L3 Cache” Enabled/Disabled.

☐ **Hyper-Threading Technology**

Select “Hyper-Threading Technology” Enabled/Disabled

☐ **Quick Power On Self Test**

Select “Quick Power On Self Test” Enabled/Disabled.

☐ **First/Second/Third Boot Device**

Select boot device priority.

☐ **Boot Other Device**

Select “Boot Other Device” Enabled/Disabled.

☐ **Boot Up NumLock Status**

Select <NumLock> key ON/Off when system boot up.

☐ **Gate A20 Option**

Select Gate A20 controlled by Keyboard controller (Normal) or Port 92 (Fast).

☐ **Typematic Rate Setting**

Select “Typematic Rate Setting” Enabled to set,
Typematic Rate (Chars/Sec): Number of characters repeated in one second.
Typematic Delay (Msec): When holding one key, set the time between the first and second character displayed.

☐ **Security Option**

Select security mode,
Setup: Require password to permit BIOS setup utility.
System: Require password to permit boot-up and BIOS setup utility.

☐ **MPS Version Control For OS**

Select MPS (Multiprocessor Specification) Version 1.4 to added extended configuration tables to improve support for multiple PCI bus configurations and improve future expandability. It is also required for a secondary PCI bus to work without the need for a bridge. Select Version 1.1 for older Operating Systems.

☐ **OS Select For DRAM > 64M**

Select “OS2” only if you are running older version of IBM OS/2 Operating System with greater than 64MB of RAM on the system. Otherwise select “Non-OS/2” setting.

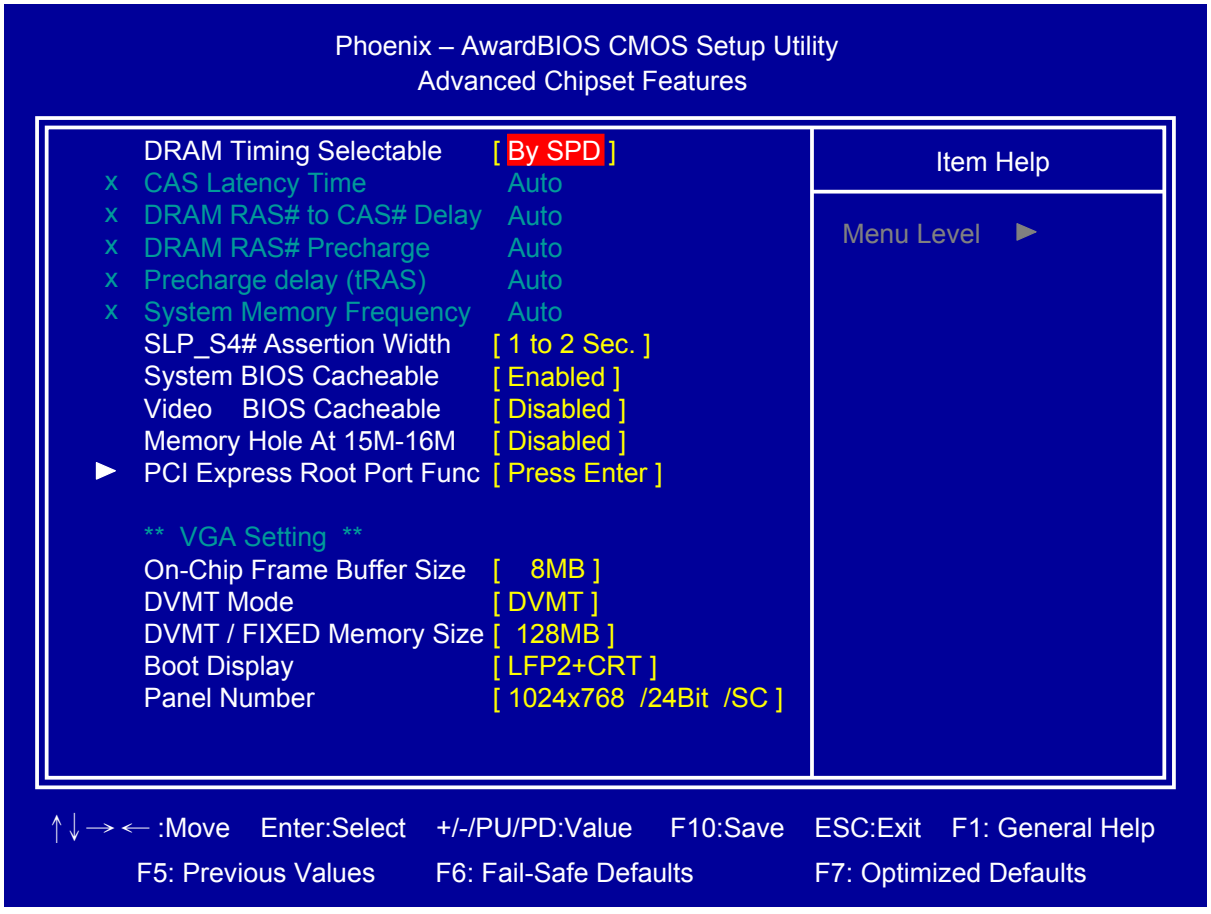
☐ **Report No FDD For WIN 95**

If running Windows 95/98 without floppy disk drive, select “Enabled” to release IRQ6. This is required to pass Windows 95/98's SCT test, If select “Disabled”, BIOS will not report missing floppy drive to Win95/98.

☐ **Small Logo(EPA) Show**

Select EPA (Environmental Protection Agency) Energy Star logo appears during the system boot-up process.

2.4 Advanced Chipset Features


Phoenix – AwardBIOS CMOS Setup Utility
Advanced Chipset Features
DRAM Timing Selectable [By SPD]
x CAS Latency Time Auto
x DRAM RAS# to CAS# Delay Auto
x DRAM RAS# Precharge Auto
x Precharge delay (tRAS) Auto
x System Memory Frequency Auto
SLP_S4# Assertion Width [1 to 2 Sec.]
System BIOS Cacheable [Enabled]
Video BIOS Cacheable [Disabled]
Memory Hole At 15M-16M [Disabled]
► PCI Express Root Port Func [Press Enter]
** VGA Setting **
On-Chip Frame Buffer Size [8MB]
DVMT Mode [DVMT]
DVMT / FIXED Memory Size [128MB]
Boot Display [LFP2+CRT]
Panel Number [1024x768 /24Bit /SC]
Item Help
Menu Level ►
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ **DRAM Timing Selectable**

Select DRAM timing by SPD (Serial Presence Detect) or manual.

☐ **SLP_S4# Assertion Width**

Select the minimum assertion width of the SLP-S4# signal to guarantee the DRAM has been safely power-cycled.

☐ **System BIOS Cacheable**

Select Enabled to caching of the system BIOS at F0000h-FFFFFh, resulting in better system performance. However, if any program is written to this memory area, the system error may result.

☐ **Video BIOS Cacheable**

Select Enabled to caching of the video BIOS at C0000h-F7FFFh, resulting in better video performance. However, if any program is written to this memory area, the system error may result.

☐ **Memory Hole At 15M-16M**

Select Enabled to improve performance, certain space in memory can be reserved for ISA cards. The memory must be mapped into the memory space below 16 MB.

☐ **PCI Express Root Port Func**

Press <Enter> to setting PCI Express function

☐ **On-Chip Frame Buffer Size**

Select share system memory 1MB or 8MB.

☐ **DVMT Mode**

DVMT (Dynamic Video Memory Technology) allowing the system to dynamically allocate memory resources according to the demands of the system at any point in time, that improve efficiency of the memory allocated to either system or graphics processor.

☐ **DVMT/Fixed Memory Size**

Select DVMT/Fixed Memory Size 64MB/128MB/224MB.

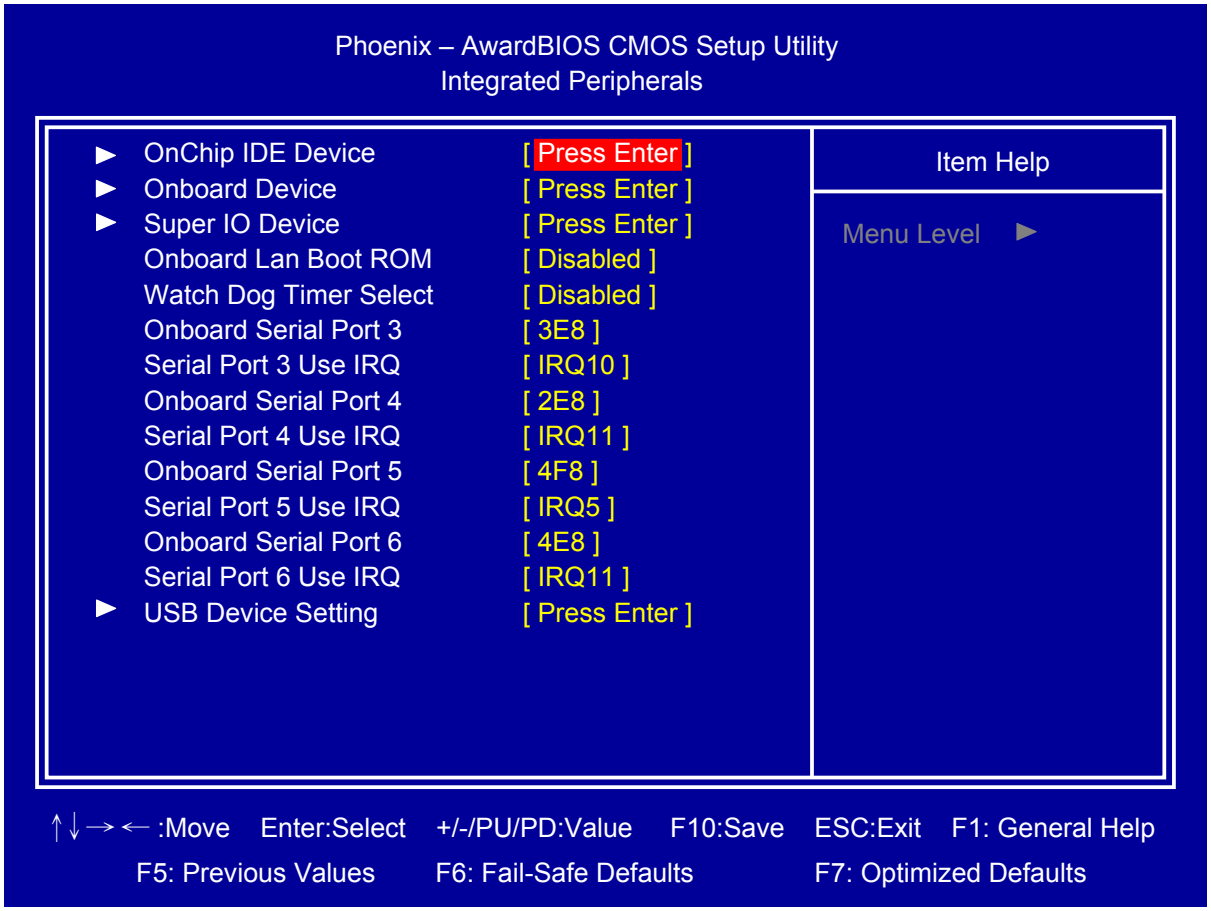
☐ **Boot Display**

Select boot display device type.

☐ **Panel Number**

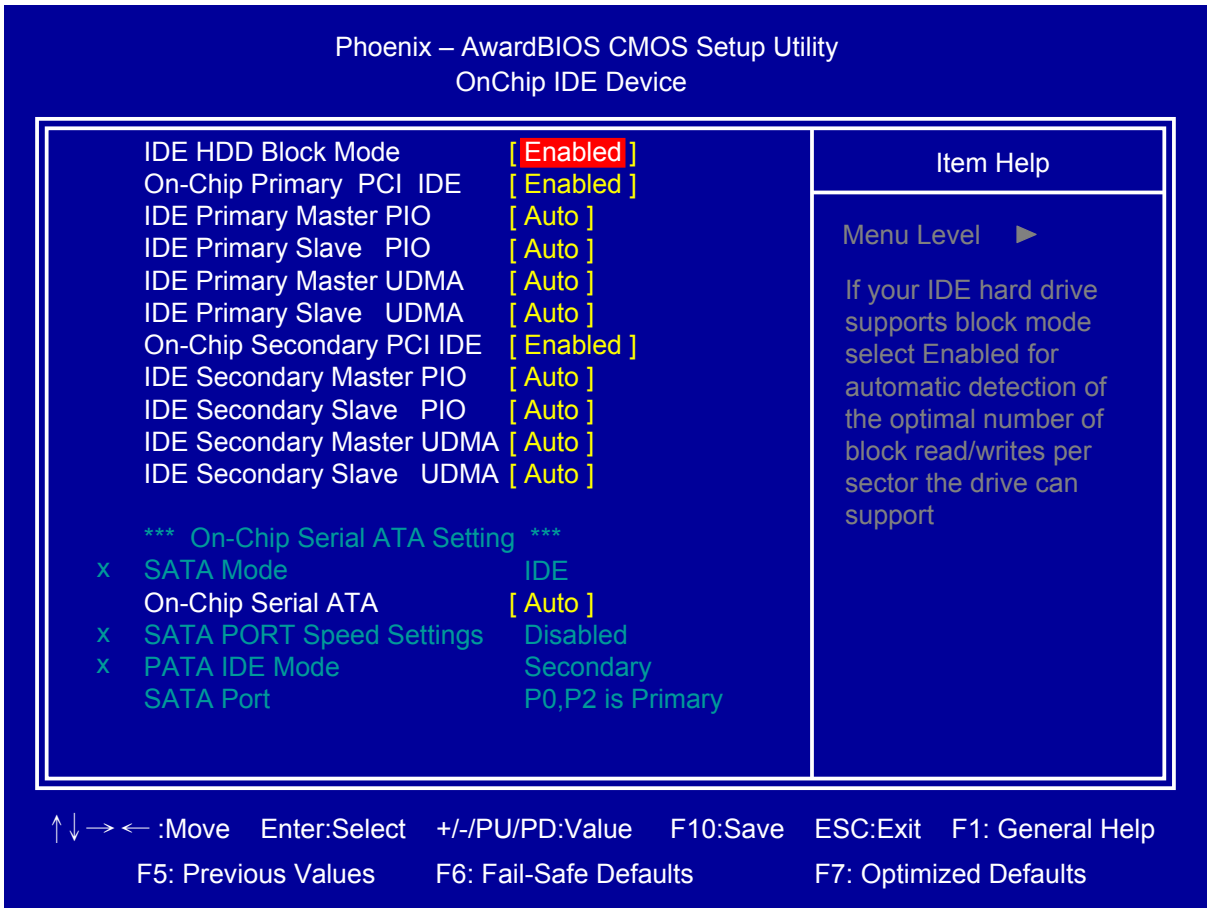
Select LCD panel type.

2.5 Integrated Peripherals


Phoenix – AwardBIOS CMOS Setup Utility
Integrated Peripherals
► OnChip IDE Device [Press Enter]
► Onboard Device [Press Enter]
► Super IO Device [Press Enter]
Onboard Lan Boot ROM [Disabled]
Watch Dog Timer Select [Disabled]
Onboard Serial Port 3 [3E8]
Serial Port 3 Use IRQ [IRQ10]
Onboard Serial Port 4 [2E8]
Serial Port 4 Use IRQ [IRQ11]
Onboard Serial Port 5 [4F8]
Serial Port 5 Use IRQ [IRQ5]
Onboard Serial Port 6 [4E8]
Serial Port 6 Use IRQ [IRQ11]
► USB Device Setting [Press Enter]
Item Help
Menu Level ►
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

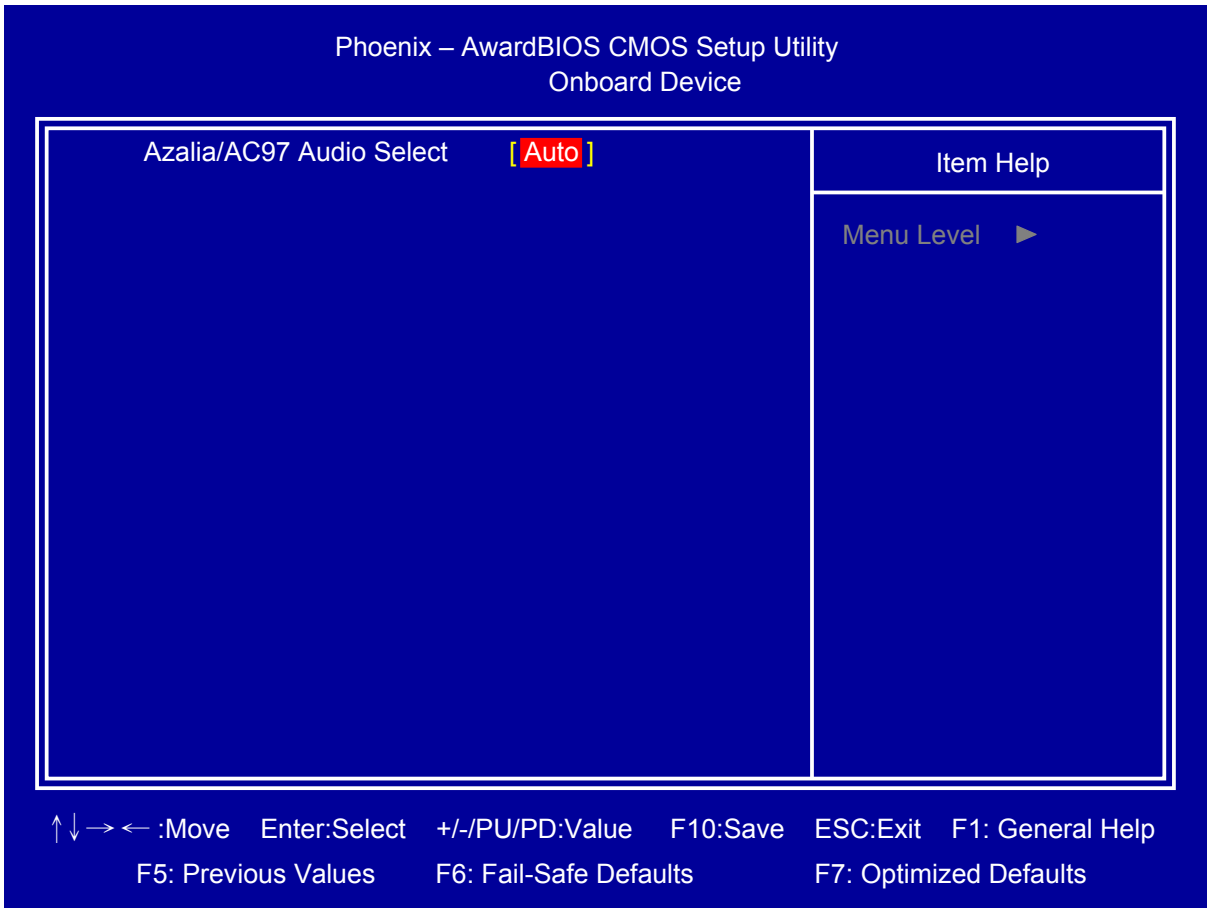
☐ OnChip IDE Device

Press <Enter> to set IDE and SATA device configuration.


Phoenix – AwardBIOS CMOS Setup Utility
OnChip IDE Device
IDE HDD Block Mode [Enabled]
On-Chip Primary PCI IDE [Enabled]
IDE Primary Master PIO [Auto]
IDE Primary Slave PIO [Auto]
IDE Primary Master UDMA [Auto]
IDE Primary Slave UDMA [Auto]
On-Chip Secondary PCI IDE [Enabled]
IDE Secondary Master PIO [Auto]
IDE Secondary Slave PIO [Auto]
IDE Secondary Master UDMA [Auto]
IDE Secondary Slave UDMA [Auto]
*** On-Chip Serial ATA Setting ***
x SATA Mode IDE
On-Chip Serial ATA [Auto]
x SATA PORT Speed Settings Disabled
x PATA IDE Mode Secondary
SATA Port P0,P2 is Primary
Item Help
Menu Level ►
If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

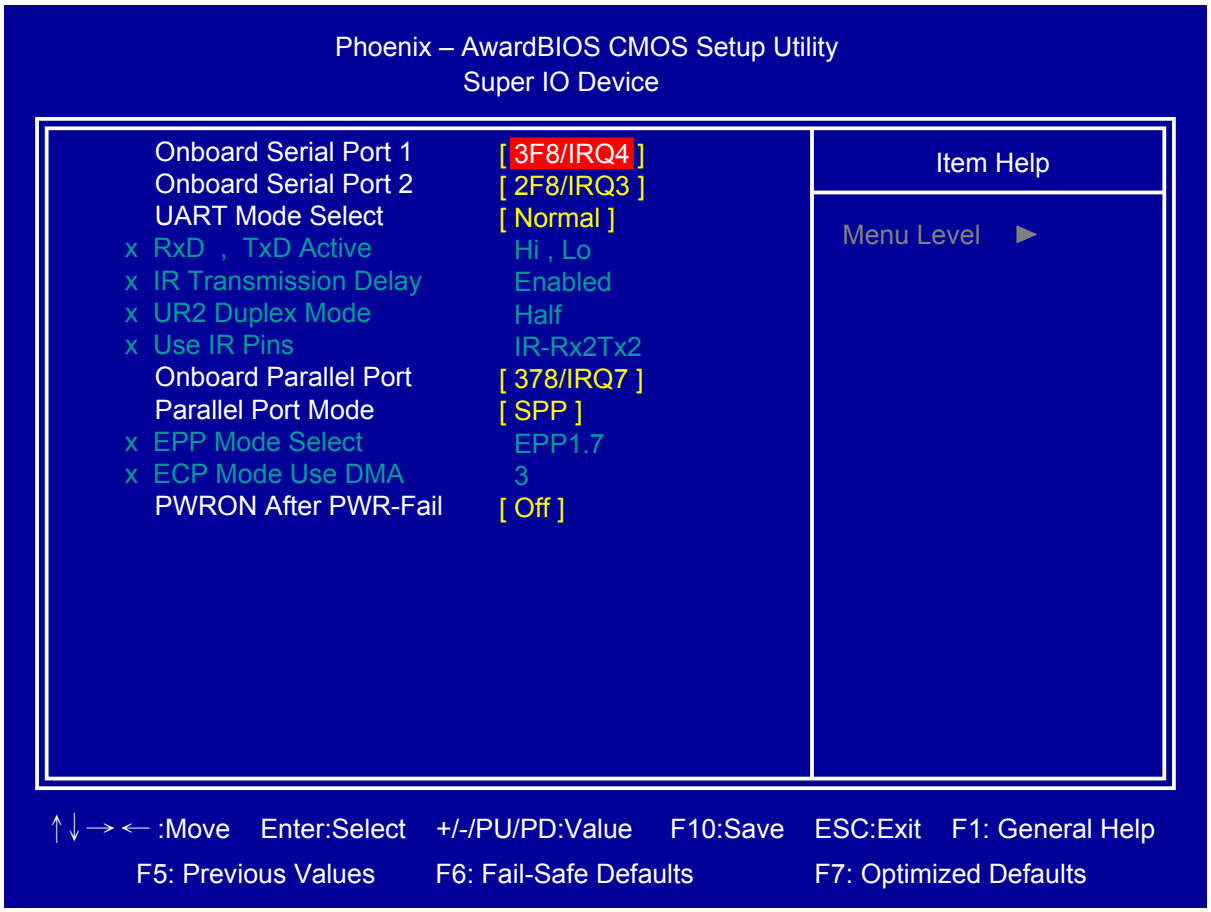
☐ Onboard Device

Press <Enter> to select Azalia/AC97 Auto/All Disabled.


Phoenix – AwardBIOS CMOS Setup Utility
Onboard Device
Azalia/AC97 Audio Select [Auto]
Item Help
Menu Level ►
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ Super IO Device

Press <Enter> to select Serial, Parallel and “PWRON After PWR-Fail” configuration.


Phoenix – AwardBIOS CMOS Setup Utility
Super IO Device
Onboard Serial Port 1 [3F8/IRQ4]
Onboard Serial Port 2 [2F8/IRQ3]
UART Mode Select [Normal]
x RxD , TxD Active Hi , Lo
x IR Transmission Delay Enabled
x UR2 Duplex Mode Half
x Use IR Pins IR-Rx2Tx2
Onboard Parallel Port [378/IRQ7]
Parallel Port Mode [SPP]
x EPP Mode Select EPP1.7
x ECP Mode Use DMA 3
PWRON After PWR-Fail [Off]
Item Help
Menu Level ►
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ Onboard Lan Boot ROM

Decide whether to invoke the boot ROM of the onboard LAN chip.

☐ Watch Dog Timer Select

Select Watch dog Disabled or set timer value.

☐ Onboard Serial Port 3/4/5/6

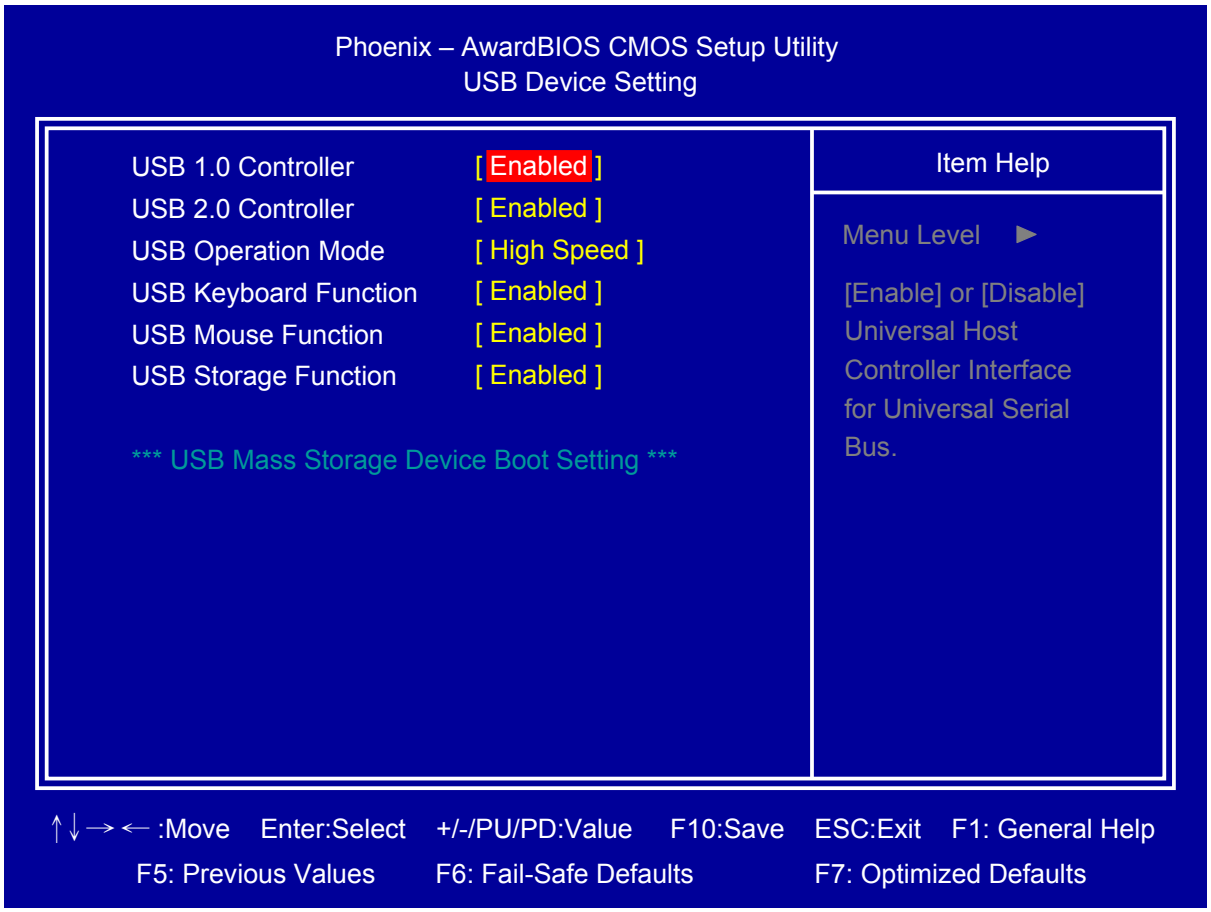
Select serial port address

☐ Serial Port 3/4/5/6 Use IRQ

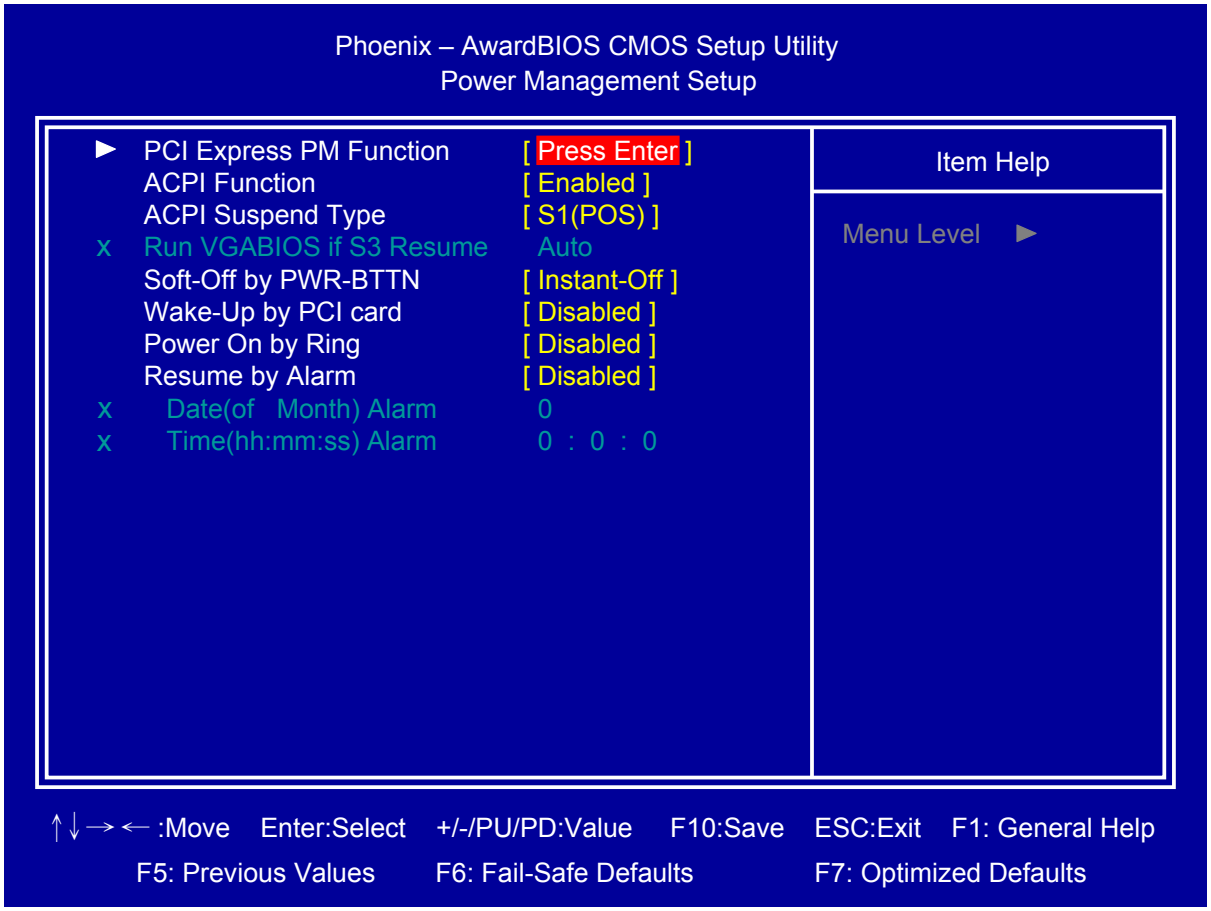
Select serial port IRQ

☐ USB Device Setting

Press <Enter> to select USB device configuration.

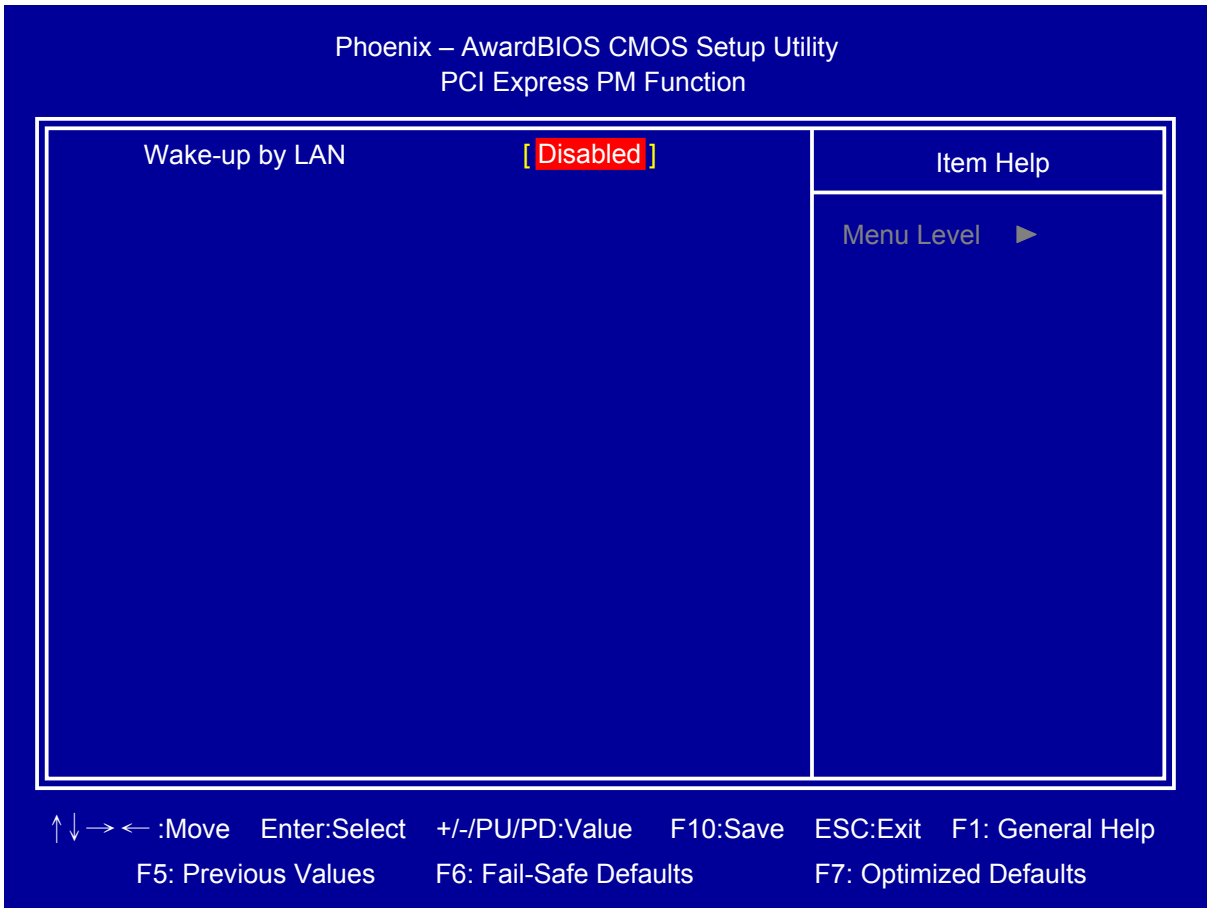

Phoenix – AwardBIOS CMOS Setup Utility
USB Device Setting
USB 1.0 Controller [Enabled]
USB 2.0 Controller [Enabled]
USB Operation Mode [High Speed]
USB Keyboard Function [Enabled]
USB Mouse Function [Enabled]
USB Storage Function [Enabled]
*** USB Mass Storage Device Boot Setting ***
Item Help
Menu Level ►
[Enable] or [Disable] Universal Host Controller Interface for Universal Serial Bus.
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

2.6 Power Management Setup


Phoenix – AwardBIOS CMOS Setup Utility
Power Management Setup
PCI Express PM Function [Press Enter]
ACPI Function [Enabled]
ACPI Suspend Type [S1(POS)]
x Run VGABIOS if S3 Resume Auto
Soft-Off by PWR-BTTN [Instant-Off]
Wake-Up by PCI card [Disabled]
Power On by Ring [Disabled]
Resume by Alarm [Disabled]
x Date(of Month) Alarm 0
x Time(hh:mm:ss) Alarm 0 : 0 : 0
Item Help
Menu Level ►
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ PCI Express PM Function

Press <Enter> to select “Wake-up by LAN” Enabled/Disabled.


Phoenix – AwardBIOS CMOS Setup Utility
PCI Express PM Function
Wake-up by LAN
[Disabled]
Item Help
Menu Level ►
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ ACPI Function

Select ACPI (Advanced Configuration and Power Management) Enabled/Disabled.

☐ ACPI Suspend Type

Select S1(POS)/S3(STR)/S1&S3

☐ Soft-Off by PWR_BTTN

Select power button function,

Instant-off: Press power button will power off instantly.

Delay 4 Sec: Press power button 4 second to power off.

☐ Wake-UP by PCI card

Select Wake-UP by PCI device Enabled/Disabled.

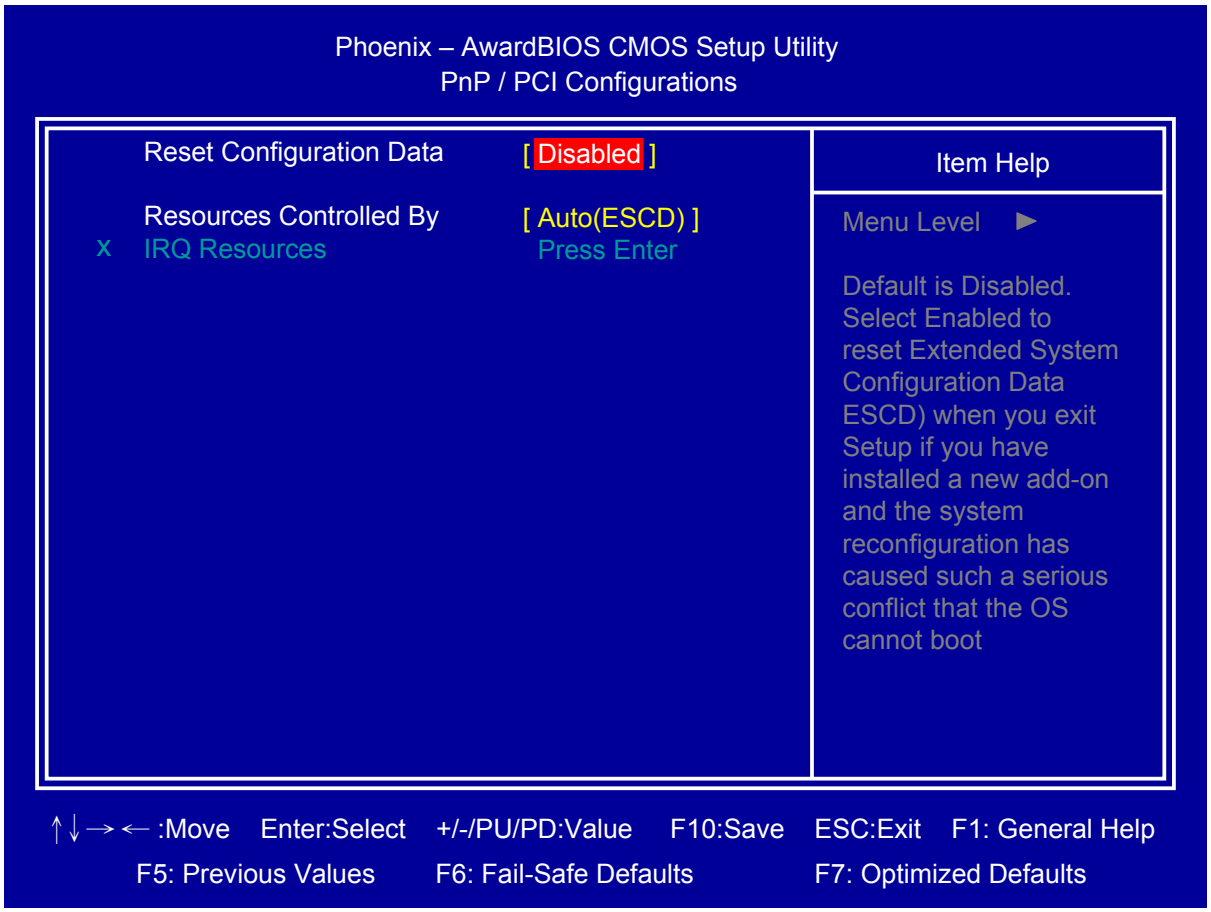
☐ **Power On by Ring**

Select Power on by Ring Indicator signal from Modem.

☐ **Resume by Alarm**

Set date and time to power on system from soft-off state.

2.7 PnP/PCI Configurations


Phoenix – AwardBIOS CMOS Setup Utility
PnP / PCI Configurations
Reset Configuration Data
[Disabled]
Resources Controlled By
[Auto(ESCD)]
x IRQ Resources
Press Enter
Item Help
Menu Level ►
Default is Disabled. Select Enabled to reset Extended System Configuration Data ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ **Init Display First**

Select initial display by PCI or Onboard device.

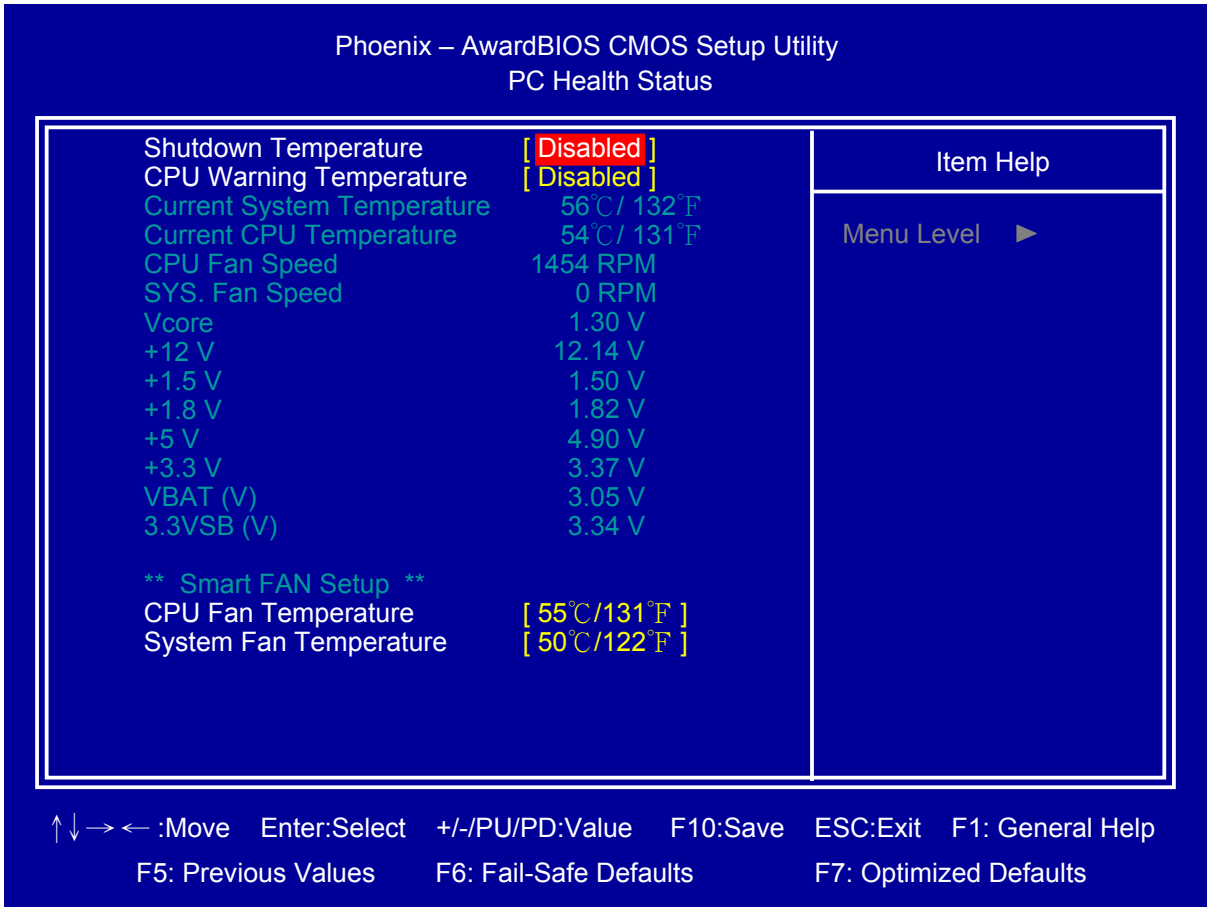
☐ **Reset Configuration Data**

Select Enabled to reset Extended System Configuration Data (ESCD) when you exit BIOS setup utility, if you have installed new add-on card and the system reconfiguration has caused such a serious conflict that the OS cannot boot.

☐ **Resources Controlled By**

BIOS can automatically configure all the boot and Plug and Play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, since BIOS automatically assigns them.

2.8 PC Health Status


Phoenix – AwardBIOS CMOS Setup Utility
PC Health Status
Shutdown Temperature [Disabled]
CPU Warning Temperature [Disabled]
Current System Temperature 56℃/ 132℉
Current CPU Temperature 54℃/ 131℉
CPU Fan Speed 1454 RPM
SYS. Fan Speed 0 RPM
Vcore 1.30 V
+12 V 12.14 V
+1.5 V 1.50 V
+1.8 V 1.82 V
+5 V 4.90 V
+3.3 V 3.37 V
VBAT (V) 3.05 V
3.3VSB (V) 3.34 V
** Smart FAN Setup **
CPU Fan Temperature [55℃/131℉]
System Fan Temperature [50℃/122℉]
Item Help
Menu Level ►
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ **Shutdown Temperature**

If CPU temperature reaches the setting value will automatic shutdown system.

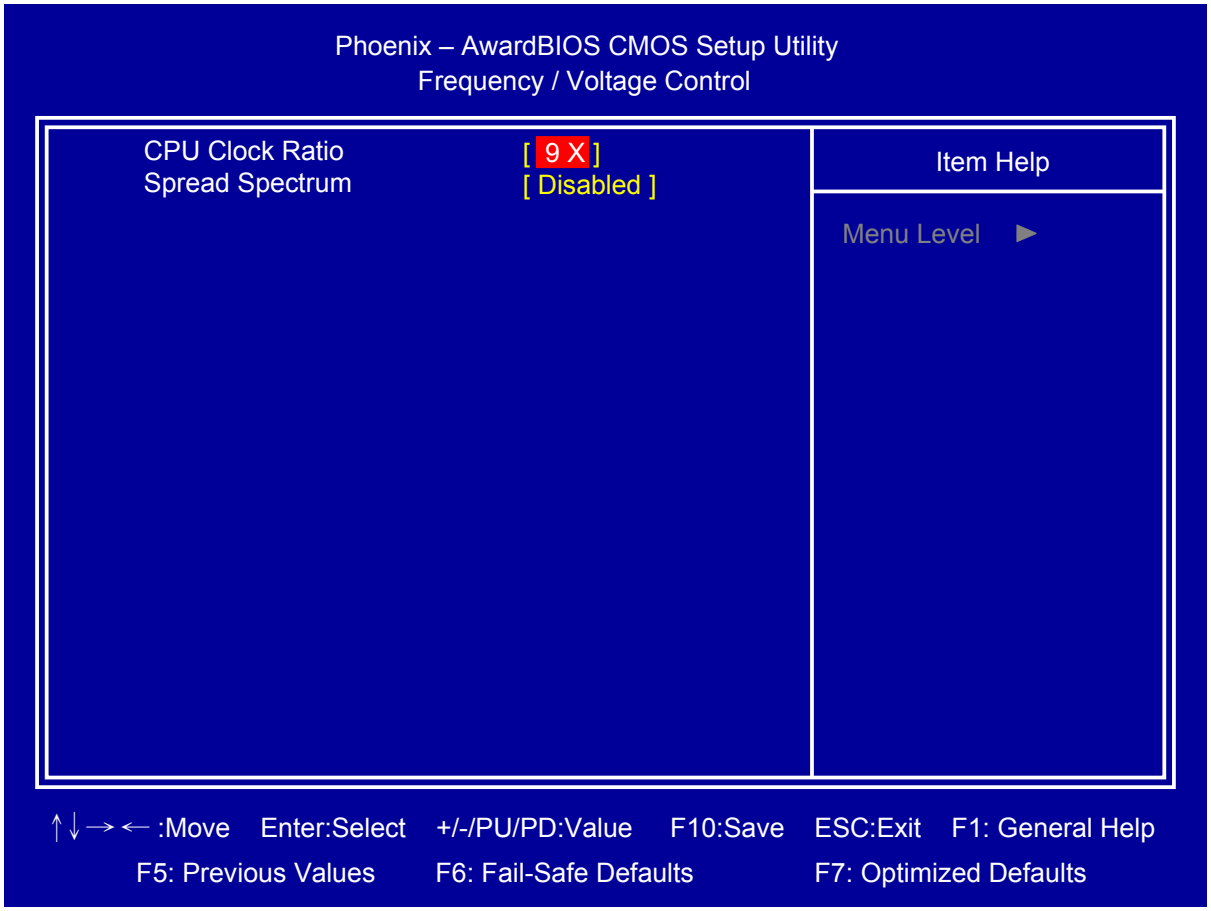
☐ **CPU Warning Temperature**

If CPU temperature reaches the setting value will beep in DOS mode.

☐ **CPU/System Fan Temperature**

Setup CPU/System Smart FAN temperature.

2.9 Frequency/Voltage Control


Phoenix – AwardBIOS CMOS Setup Utility
Frequency / Voltage Control
CPU Clock Ratio
[9 X]
Spread Spectrum
[Disabled]
Item Help
Menu Level ►
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

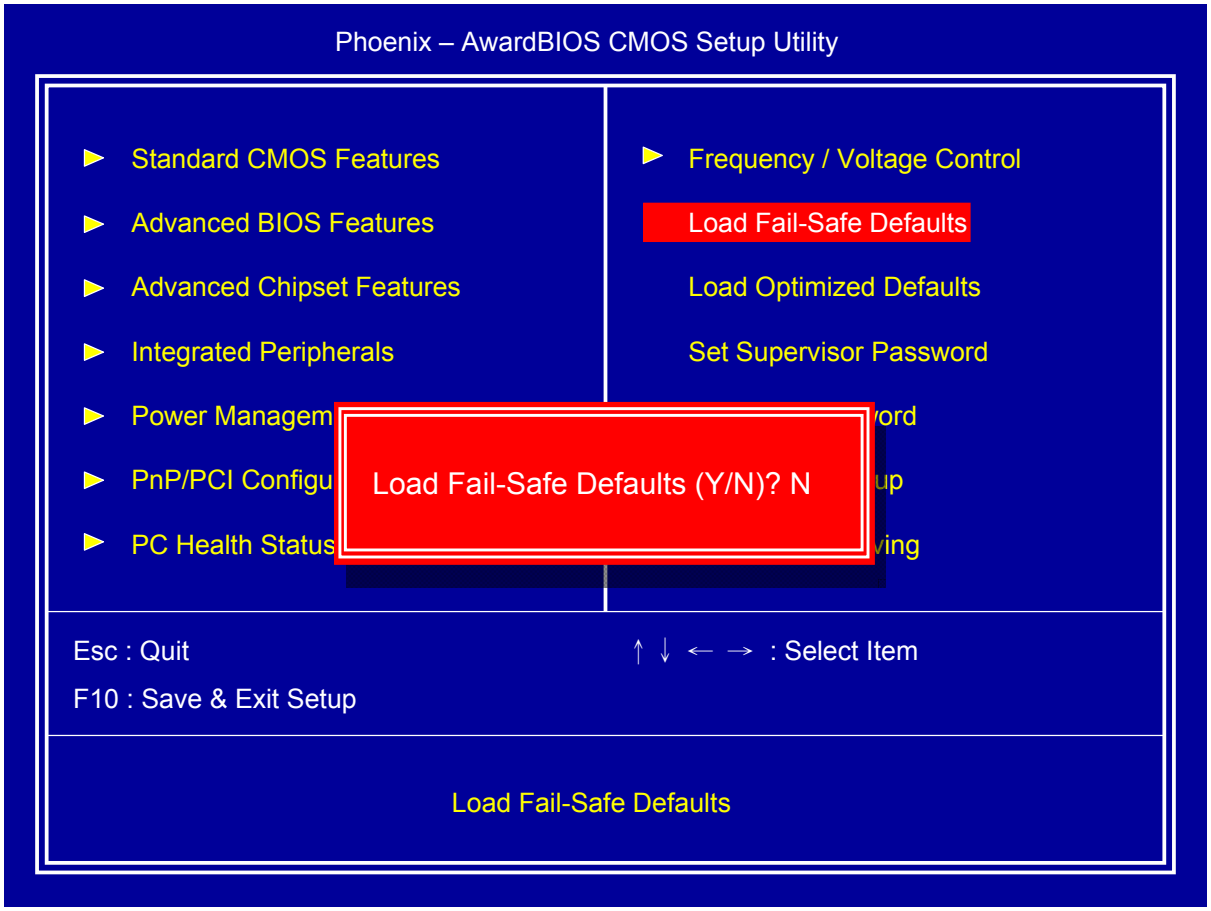
☐ **CPU Clock Ratio**

Select “CPU Clock Ratio” (From 6 to 9).

☐ **Spread Spectrum**

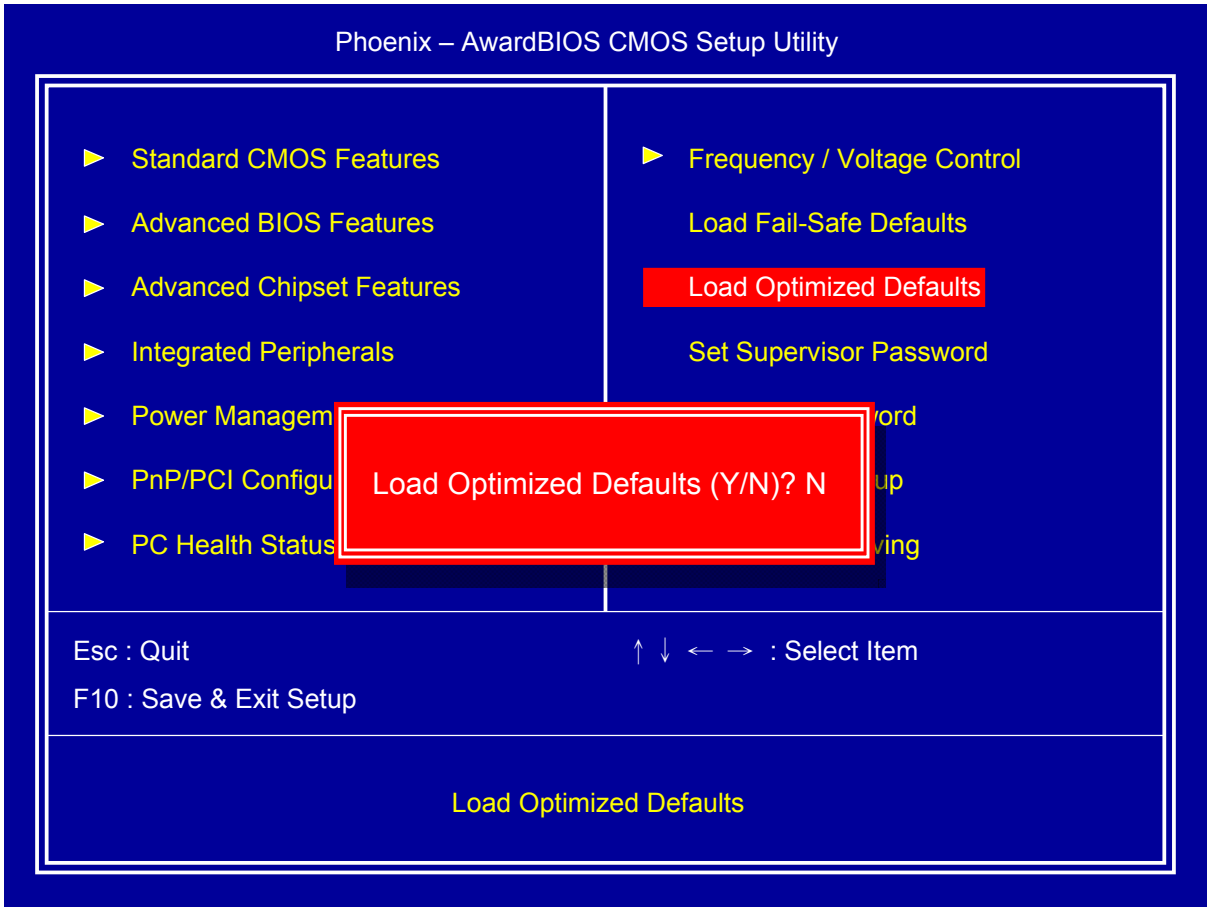
Select “Spread Spectrum” Enabled/Disabled.

2.10 Load Fail-Safe Defaults



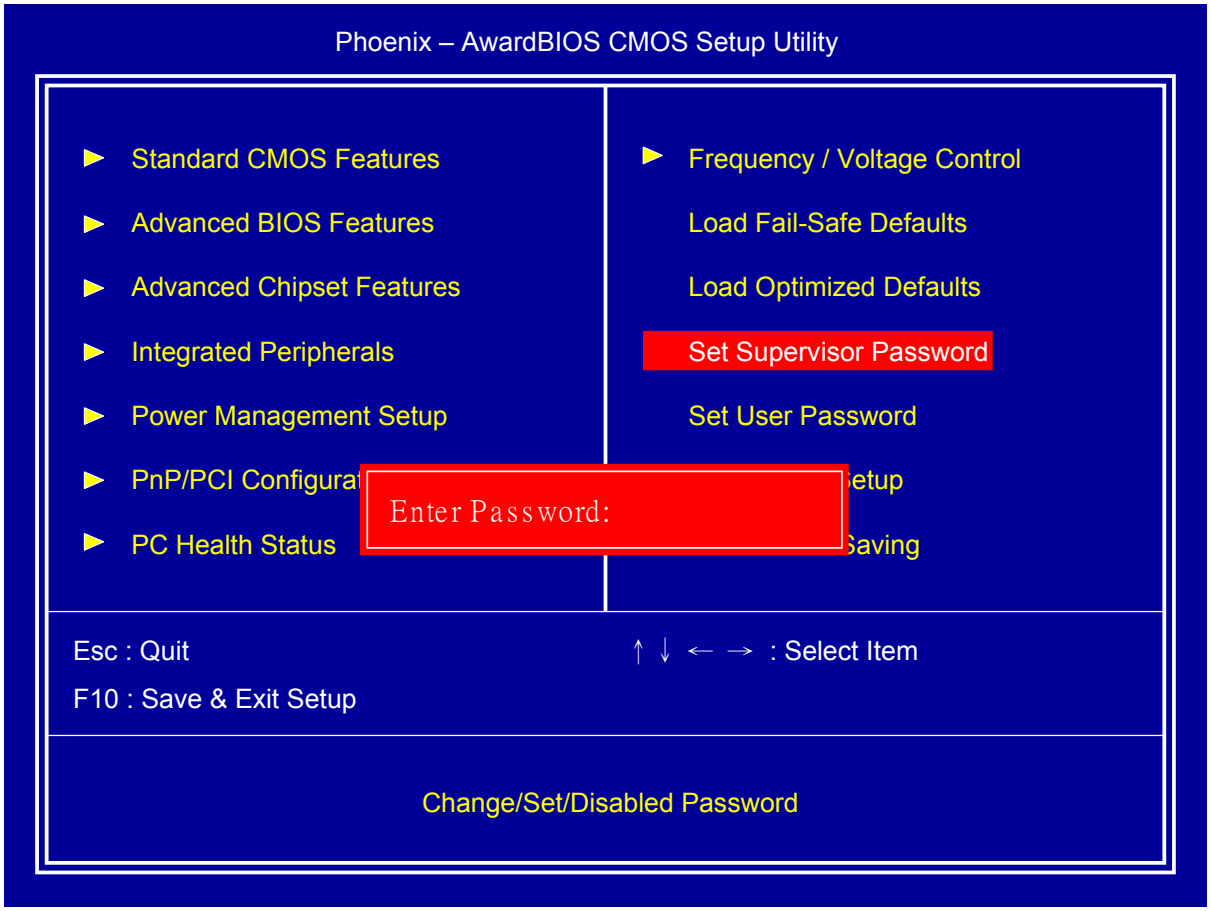
This item will set configuration for non optimized system operation.

2.11 Load Optimized Defaults



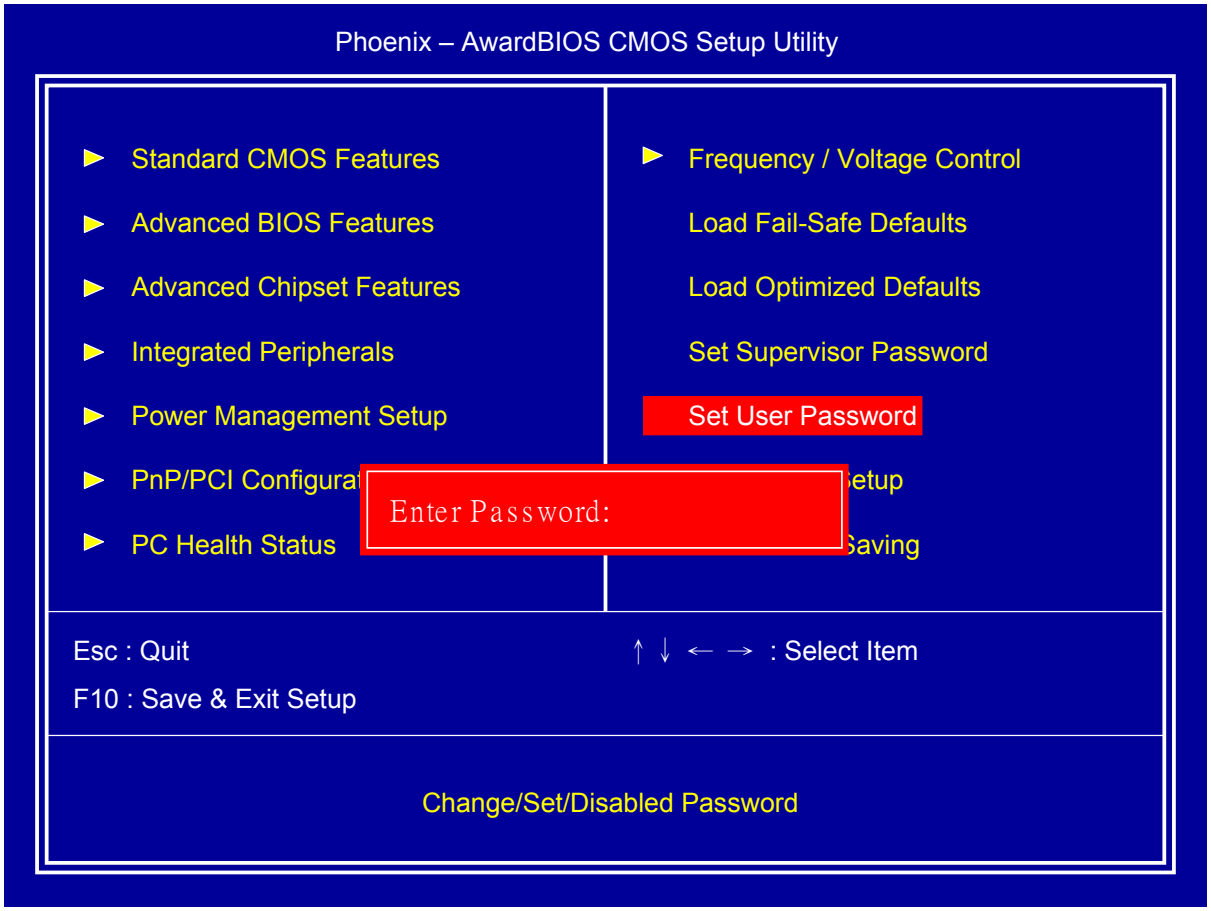
This item will restore factory default setting for optimized system operation.

2.12 Set Supervisor Password



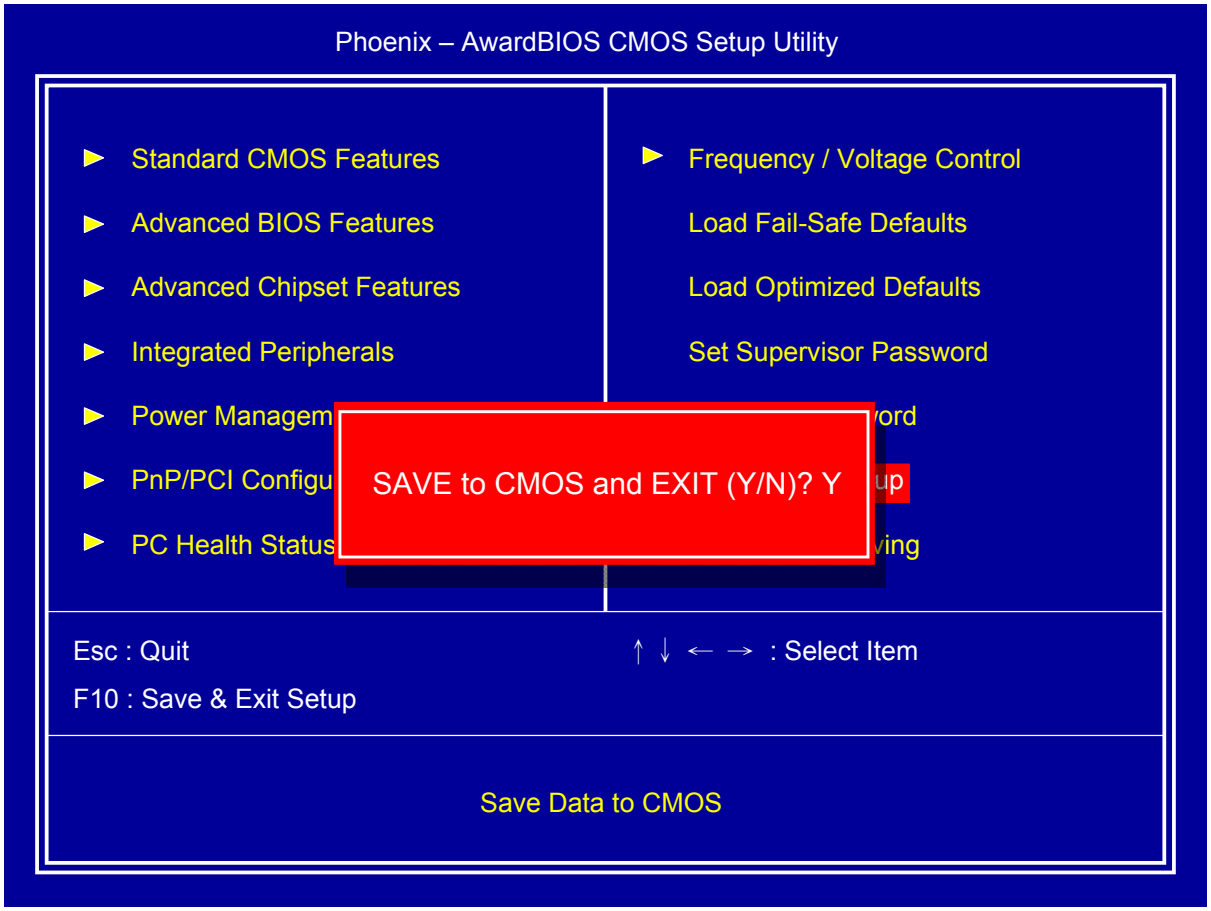
If set supervisor password, it will request typing password to enter BIOS setup utility.

2.13 Set User Password



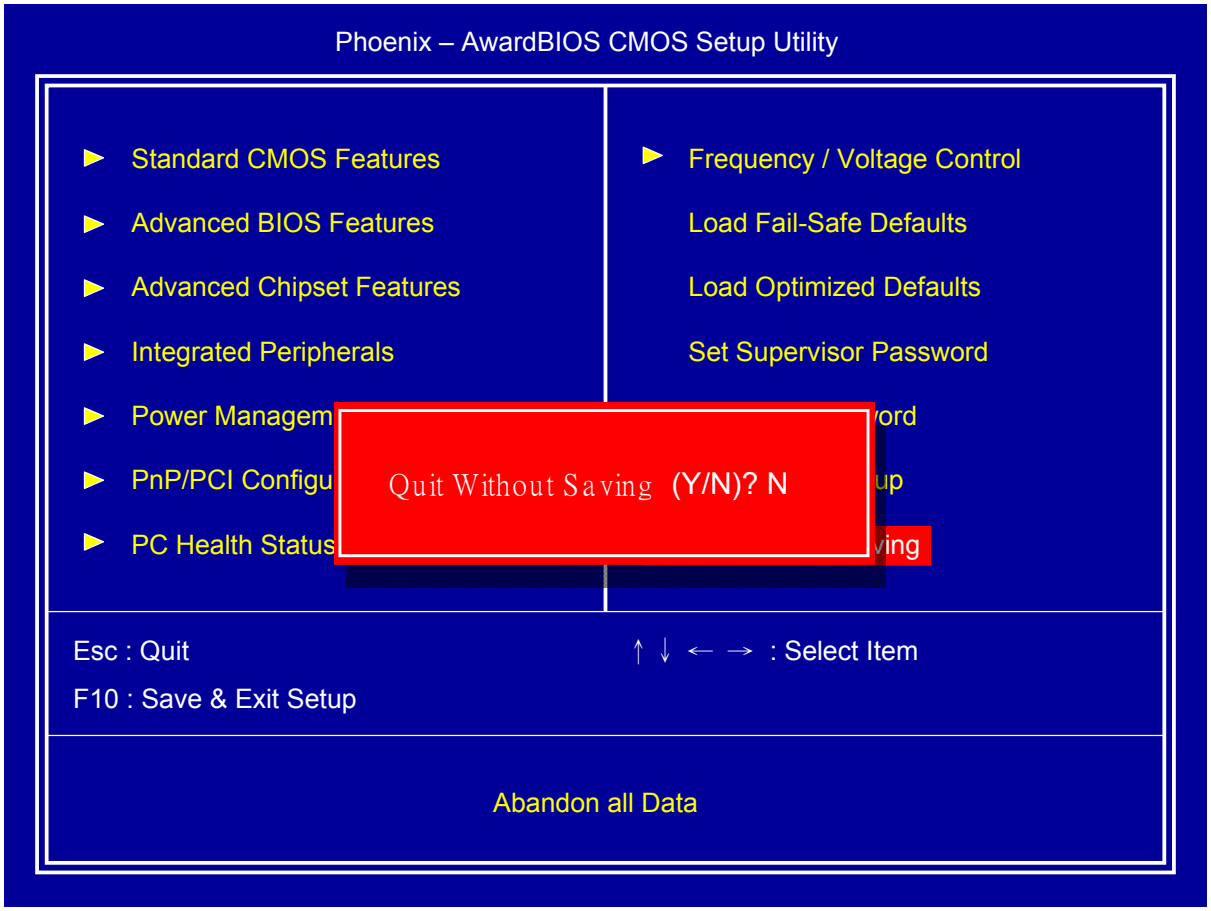
If set user password will request typing password to enter BIOS setup utility, and does not allow modifying configuration.

2.14 Save & Exit Setup



This item confirm save configuration or not before exit BIOS setup utility,
Press <Y> and <Enter> to save configuration, then reboot system.
Press <N> and <Enter> will back to BIOS setup utility.

2.15 Exit Without Saving



This item confirm save configuration or not before quit BIOS setup utility,
Press <Y> and <Enter> will not save configuration, then reboot system.
Press <N> and <Enter> will back to BIOS setup utility.

Chapter 3 Drivers Installation

This chapter introduces driver installation information.

Please insert the utility CD to CD-ROM drive, the install menu will appear automatically, if the install menu did not list suitable driver of Operate System or did not appear automatically, please select corresponding driver of utility CD to install.

The Windows XP driver installation steps are as below.

3.1 Intel Chipset Device Software

Step 1. Click “Next” to continue

Intel® Chipset Device Software
Intel® Chipset Device Software
intel
Welcome to the Setup Program
This setup program will install the Intel® Chipset Device Software onto this computer. It is strongly recommended that you exit all programs before continuing.
< Back
Next >
Cancel
Intel® Installation Framework

Step 2. Read the License Agreement and click “Yes” to continue

Intel® Chipset Device Software
Intel® Chipset Device Software
License Agreement
intel
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
< Back
Yes
No
Intel® Installation Framework

Step 3. Click “Next” to continue

Intel® Chipset Device Software
Intel® Chipset Device Software
Readme File Information
intel
Refer to the Readme file below to view the system requirements and installation information.
Press the Page Down key to view the rest of the file.
****
* Product: Intel(R) Chipset Device Software
* Release: Production Version
* Version: 8.3.1.1009
* Target Chipset#: X38 & 3200/3210 Chipset
* Date: July 26 2007
****
< Back
Next >
Cancel
Intel® Installation Framework

Step 4. Click “Next” to continue

Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Progress
Please wait while the following setup operations are performed:
Installing Driver: Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C9
Version: 8.2.0.1008
Installing Driver: Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CA
Version: 8.2.0.1008
Installing Driver: Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CB
Version: 8.2.0.1008
Installing Driver: Intel(R) 82801G (ICH7 Family) USB2 Enhanced Host Controller - 27CC
Version: 8.2.0.1008
Click Next to continue.
Next
Intel® Installation Framework

Step 5. Click “Finish” to complete setup

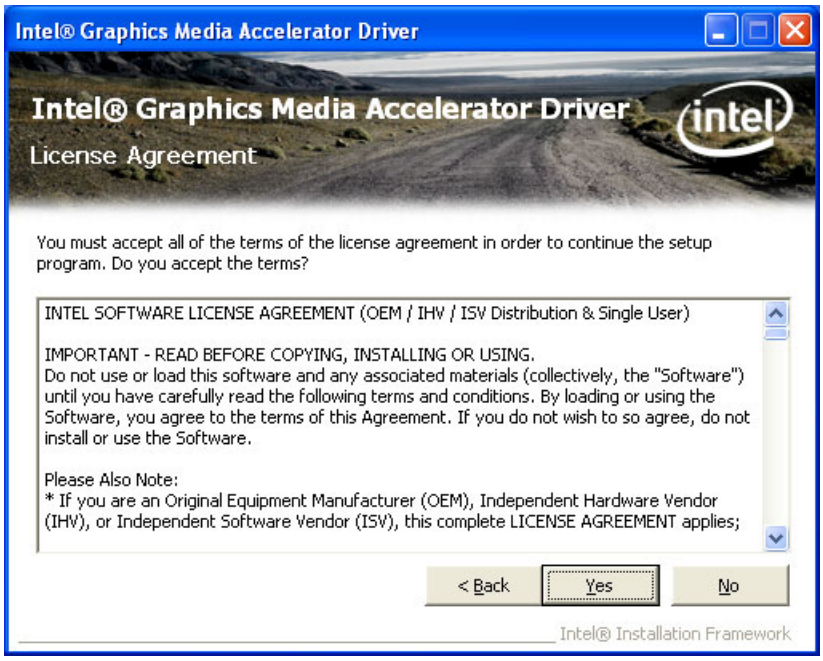
Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Is Complete
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

3.2 Intel Graphic Media Accelerator Driver

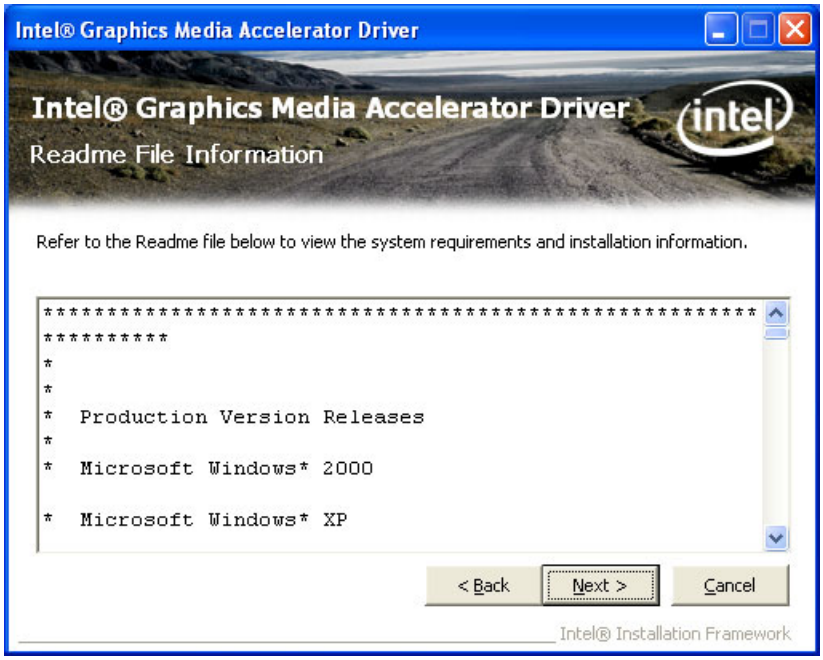
Step 1. Click “Next” to continue

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
intel
Welcome to the Setup Program
This setup program will install the Intel® Graphics Media Accelerator Driver onto this computer. It is strongly recommended that you exit all programs before continuing. Click Next to continue.
< Back
Next >
Cancel
Intel® Installation Framework

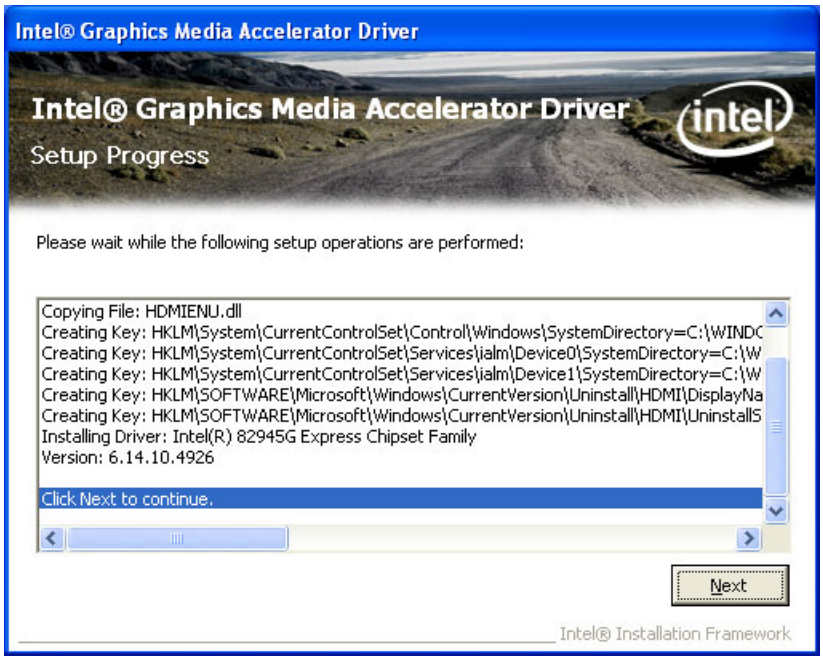
Step 2. Read the License Agreement and click “Yes” to continue


Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
License Agreement
intel
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
< Back
Yes
No
Intel® Installation Framework

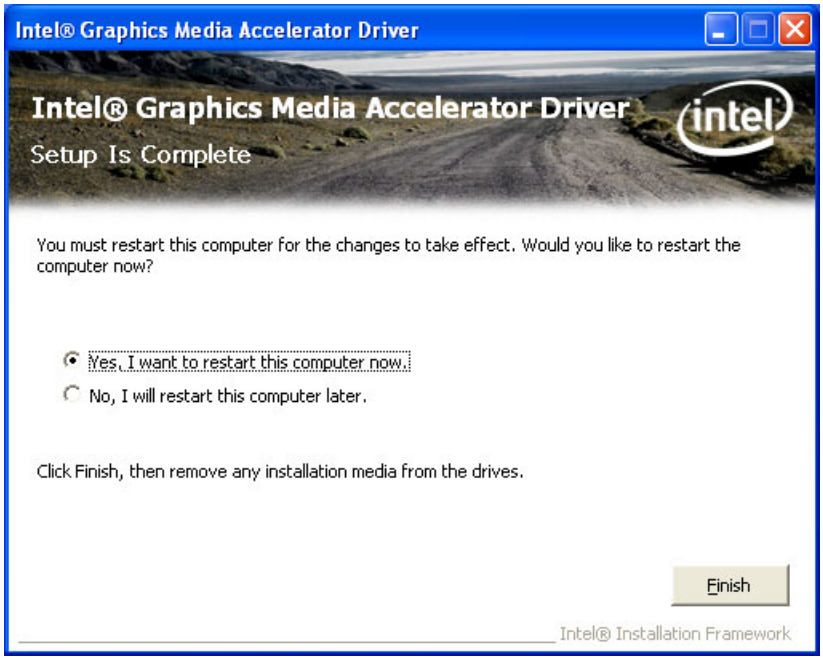
Step 3. Click “Next” to continue



Step 4. Click “Next” to continue

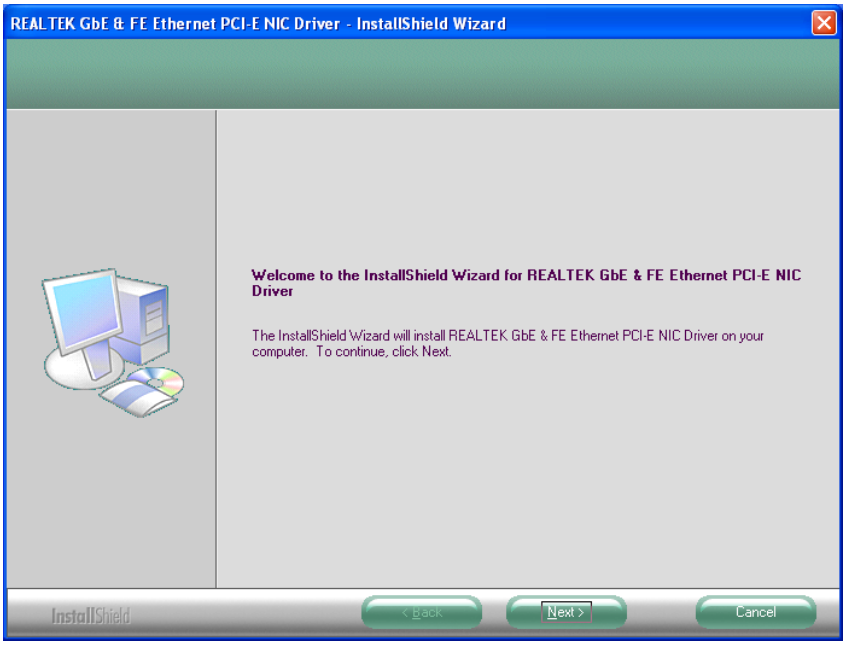


Step 5. Click “Finish” to complete setup

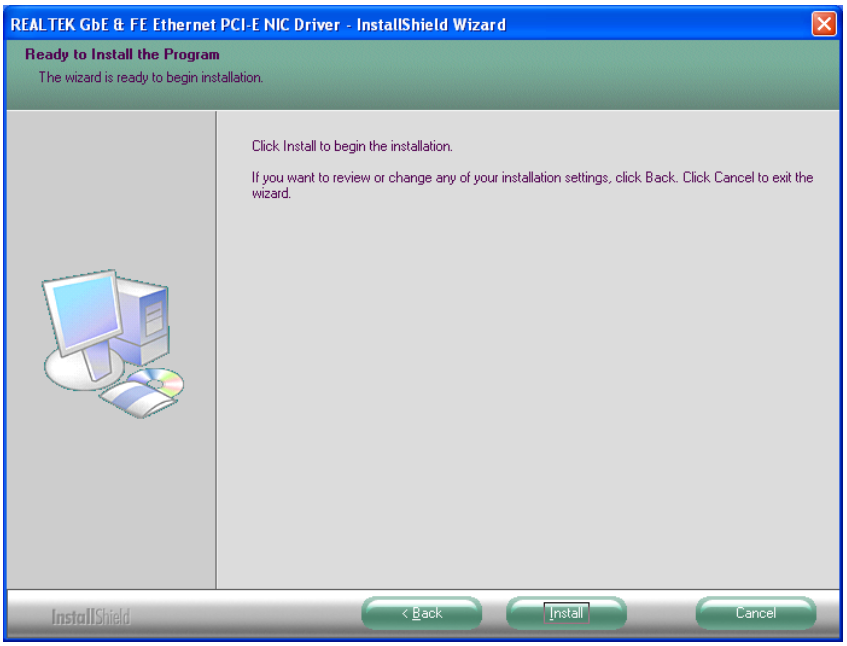

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Setup Is Complete
intel
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

3.3 LAN Driver

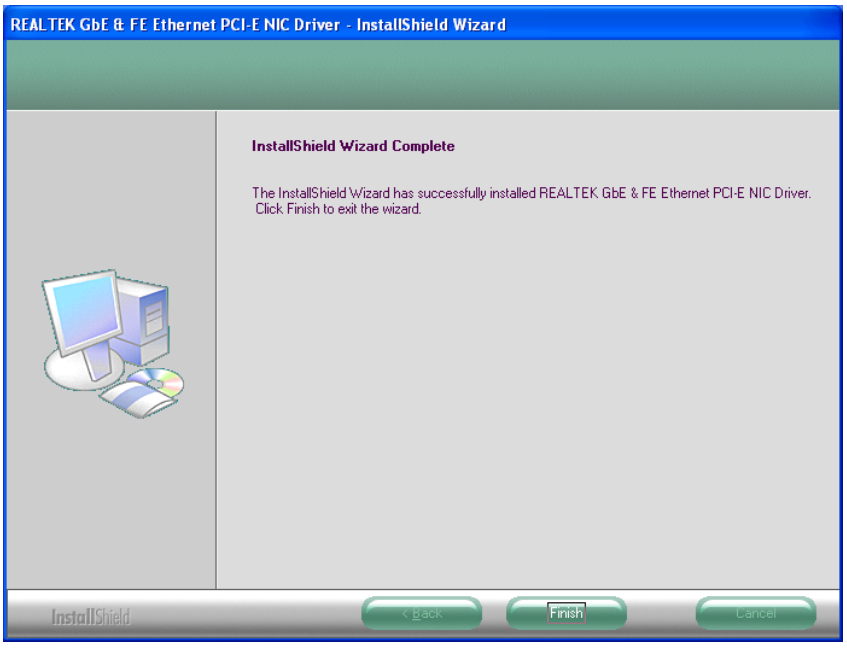
Step 1. Click “Next” to continue


REALTEK GbE & FE Ethernet PCI-E NIC Driver - InstallShield Wizard
Welcome to the InstallShield Wizard for REALTEK GbE & FE Ethernet PCI-E NIC Driver
The InstallShield Wizard will install REALTEK GbE & FE Ethernet PCI-E NIC Driver on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

Step 2. Click “Install” to continue

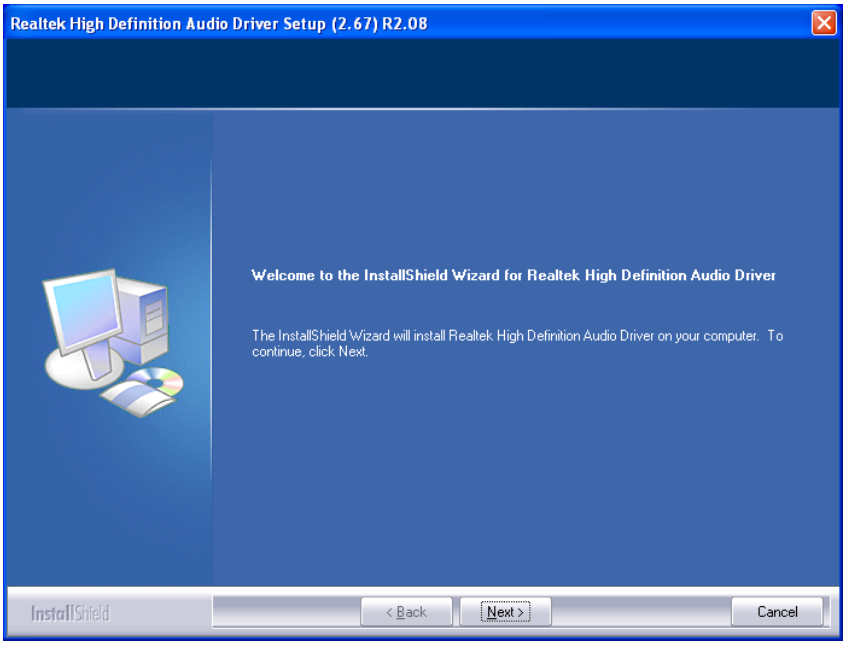

REALTEK GbE & FE Ethernet PCI-E NIC Driver - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

Step 3. Click “Finish” to complete setup

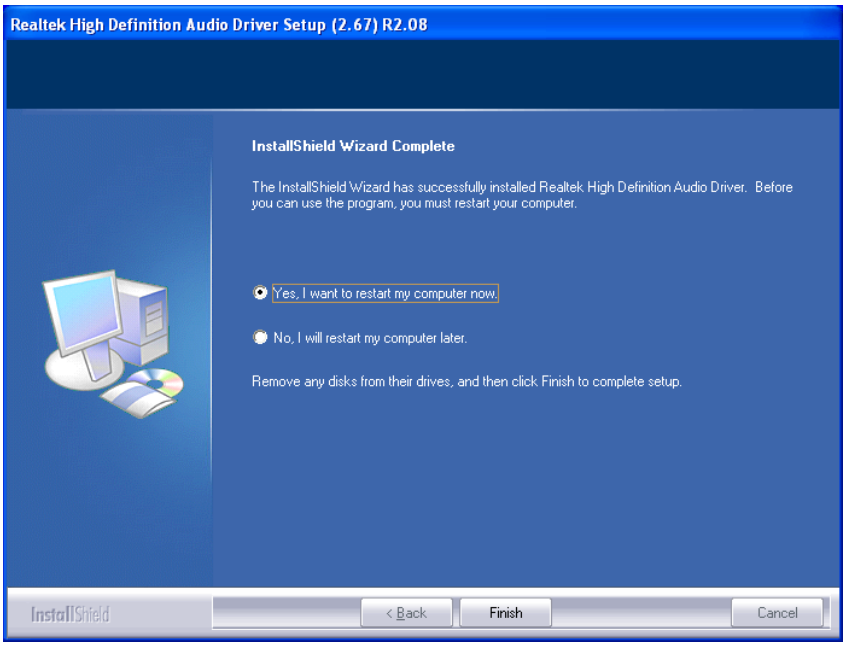

REALTEK GbE & FE Ethernet PCI-E NIC Driver - InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed REALTEK GbE & FE Ethernet PCI-E NIC Driver. Click Finish to exit the wizard.
InstallShield
< Back
Finish
Cancel

3.4 Audio Driver

Step 1. Click “Next” to continue


Realtek High Definition Audio Driver Setup (2.67) R2.08
Welcome to the InstallShield Wizard for Realtek High Definition Audio Driver
The InstallShield Wizard will install Realtek High Definition Audio Driver on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

Step 2. Click “Finish” to complete setup


Realtek High Definition Audio Driver Setup (2.67) R2.08
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed Realtek High Definition Audio Driver. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
InstallShield
< Back
Finish
Cancel

Appendix-A Watchdog

The system board provides Watchdog function, the Super I/O setting step as below.

Step 1: CR2D, Bit0→0 (select pin77 to WDTO#)
Step 2: LD8, CR30, Bit0→1 (Active WDTO#)
Step 3: LD8, CRF7, Bit4→Write 0 to clear WDTO# status.
Step 4: LD8, CRF5, Bit3→0: Second mode, 1: Minute mode
Step 5: LD8, CRF6, Bit [7:0] →Set WDTO# Time out value. (WDTO# startup after setting the system time, or setup from step 3 ~ step 5 to restart WDT.)

Appendix-B GPIO

The system board provides input and output ports that can be individually configured to perform a simple basic I/O function. Users can configure each individual port to become an input or output port by programming register bit of I/O selection. To invert port value, the setting of Inversion Register has to be made. Port values can be set to read or write through Data Register.

Please refer previous chapter for pin define description.

Access Cash Drawer GPIO Programming Guide

There are two PNP I/O port addresses that can be used to configure GPIO ports,

(1). 0x2E - **EFER** (Extended Function Enable Register, for entering Extended Function Mode)
- **EFIR** (Extended Function Index Register, for identifying CR index number)

(2). 0x2F - **EFDR** (Extended Function Data Register, for accessing desired CR)

Below are some example codes for demonstrate GPIO function.

// Enter Extended Function Mode
outp(0x002E, 0x87);
outp(0x002E, 0x87);

// Assign Pin121-128 to be GPIO port 1
outp(0x002E, 0x29);
outp(0x002F, inp(0x002F) | 0x01);

// Select Logic Device 7
outp(0x002E, 0x07);
outp(0x002F, 0x07);

// Active Logic Device 7
outp(0x002E, 0x30);
outp(0x002F, 0x01);

// Select Inversion Mode
outp(0x002E, 0xF2);
outp(0x002F, 0x83);

// Select I/O Mode
// Bit0~bit3 output and bit4~bit7 input
outp(0x002E, 0xF1);
outp(0x002F, 0x00);

// Access GPIO ports
outp(0x002E, 0xF0);
outp(0x002F, 0x7C);

// Exit Extended Function Mode
outp(0x002E, 0xAA);

Definitions of Variables:
Each bit in the lower nibble of each Register represents the setting of a GPIO port.
Bit0 vs. GPIO DIO-Out 0
Bit1 vs. GPIO DIO-Out 1
Bit7 vs. GPIO DIO-Out 3
Bit4 vs. GPIO DIO-In 0
Bit3 vs. GPIO DIO-In 3

Value of **Inversion Register:**
Only lower nibble is available for this function.
When set to a ‘1’, the incoming/outgoing port value is inverted.
When set to a ‘0’, the incoming/outgoing port value is the same as in Data Register.

Value of **I/O Selection Register:**
Only lower nibble is available for this function.
When set to a ‘1’, respective GPIO port is programmed as an input port.
When set to a ‘0’, respective GPIO port is programmed as an output port.

Value of **Output Data / Input Data:**
Only lower nibble is available for this function.
If a port is assigned to be an output port, then its respective bit can be read/write.
If a port is assigned to be an input port, then its respective bit can be read only.

Note:
Some other functions may occupy the high nibble of the registers. Altering any content in high nibble will be undesired.